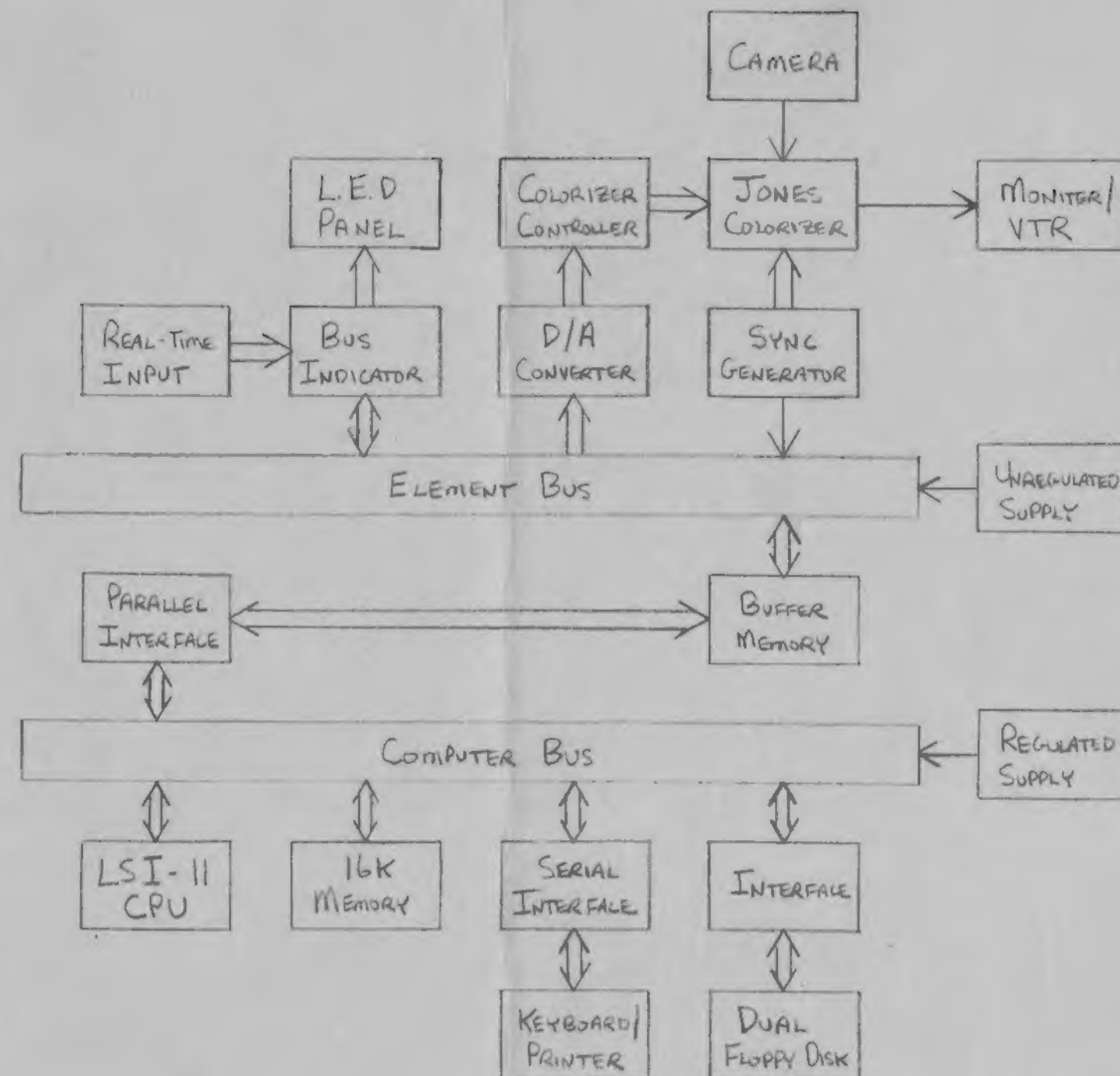


EXPERIMENTAL TV CENTER, LTD.
BINGHAMTON, N.Y.
COMPUTER - BASED
PROCESSING VIDEO SYNTHESIZER
SYSTEM DIAGRAM, 9/77 R.B.



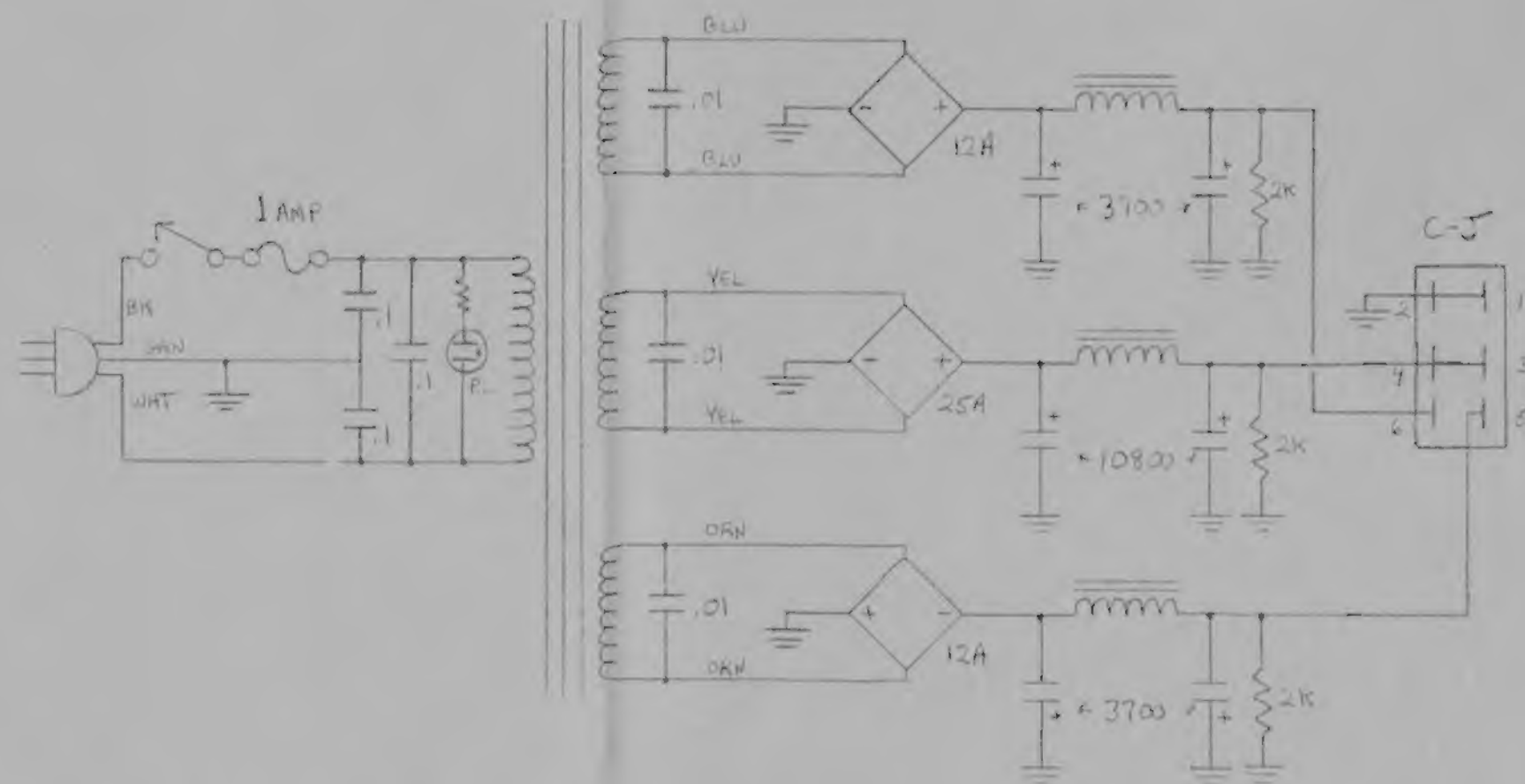
EXPERIMENTAL TV CENTER, LTD
 BINGHAMTON, N.Y.
 COMPUTER PROJECT
 ELEMENT BUS POWER SUPPLY
 6/77 RICH BREWSTER
 PAGE 1 OF 1

PART LIST:

- TRANSFORMER - BALUCH BE12616-001
 2 BRIDGE RECTIFIERS 200 PIV 12AMP
 1 BRIDGE RECTIFIER 400 PIV 25AMP
 3 CHOKES, 20 AMP, $\leq .05 \Omega$
 4 CAPACITORS, 3700 MFD AT 75V
 2 CAPACITORS, 10800 MFD AT 20V
 3 RESISTORS, 2000 OHM $\frac{1}{2}$ WATT
 1 FUSE HOLDER w/ 1AMP SLO-BLO FUSE
 3 CAPACITORS, .01 MFD 100V MYLAR
 3 CAPACITORS, .1 MFD 600V
 1 NEON PILOT LAMP ASSEMBLY
 1 S.P.T. TOGGLE SWITCH, 6 AMP 120V
 1 LINE CORD, 3 WIRE, 120V
 1 CINCH-JONES CONNECTOR, 6 PIN,
 CHASSIS MOUNTED FEMALE
 1 ALUMINUM CHASSIS 3" x 7" x 15"

CABLE PARTS:

- 1 C-J MALE, CABLE MOUNT, 6 PIN
 1 C-J FEMALE, CABLE MOUNT, 6 PIN
 10' T-CONDUIT, 18 GAUGE CABLE



CONNECTOR	CABLE	VOLTAGE	CURRENT
1, 2	BLK, GRN, BRN	GND	
3, 4	WHT, RED	+9V	6A
5	BLU	-19V	2A
6	ORN	+19V	2A

* NOTE - THESE ARE THE CABLE COLORS, NOT THE TRANSFORMER LEADS WHICH HAPPEN TO BE THE OPPOSITE COLORS.

EXPERIMENTAL TV CENTER, LTD.
 BINGHAMTON, N.Y.
 COMPUTER PROJECT 9/77 R.B.
 BUFFER MEMORY, PAGE 2 OF 3

PARTS LIST:

- 1 VECTOR 8800V UNIVERSAL 100-PIN PLUGBOARD
- 38 16-PIN DIP WIRE WRAP SOCKETS
- 10 14-PIN " " " "
- 1 24-PIN " " " "
- 4 HEAT SINKS
- 1 BERG H-854 40-PIN CONNECTOR
- 2 LM1340T-5 REGULATOR
- 4 SN7400N QUAD 2-INPUT NAND
- 2 SN7402N QUAD 2-INPUT NOR
- ✓1 SN7404N HEX INVERTER
- ✓1 SN7404N SCHOTTKY HEX INVERTER
- ✓1 SN7430N 8-INPUT NAND
- ✓1 SN7474N DUAL D FLIP FLOP
- ✓1 SN74154N 4-LINE TO 16 LINE DECODER
- ✓3 SN74157N QUAD 2:1 DATA SELECTOR
- ✓4 SN74161N ASYNCHRONOUS 4-BIT COUNTER
- ✓8 DM8097N TRI-STATE HEX BUFFER
- ✓6 N8T97N HIGH-SPEED TRI-STATE HEX BUFFER
- ✓1 DM8160N 6-BIT COMPARATOR
- ✓16 21L02 LOW POWER 10-4x1 STATIC RAM
- 2 22μF 25V ELECTROLYTIC CAPACITORS
- 2 10μF 50V " "
- 12 .1μF 35V TANTALUM "
- 1 .01μF 100V MYLAR "
- 1 .002μF " DISK "
- 1 .001μF " " "
- 1 330pF " SILVER MICA "
- 2 51Ω 1/4WATT RESISTORS
- 3 100Ω " "
- 3 1K " "
- 3 10K " "

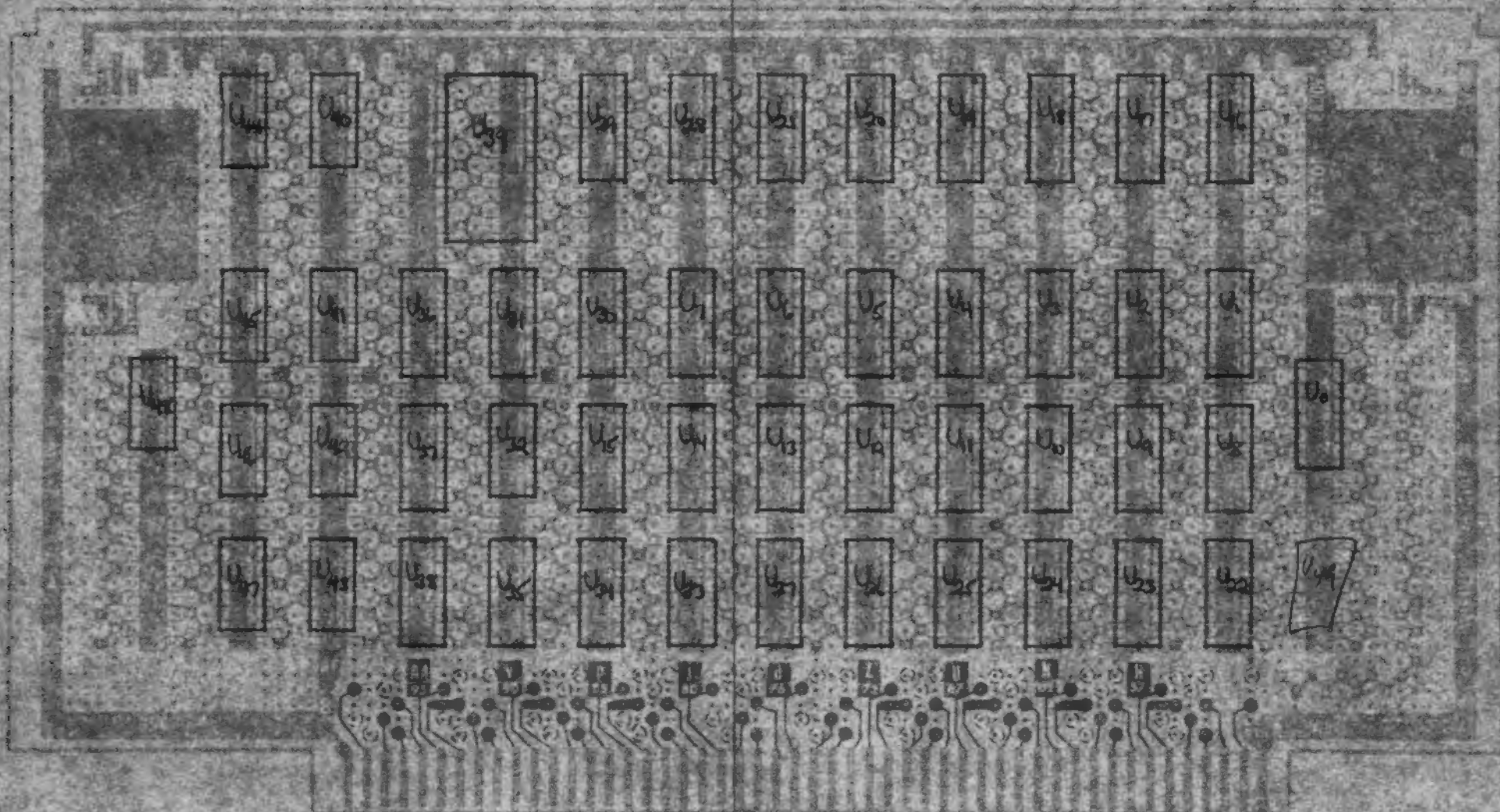
POWER CONSUMPTION:

+9VDC @

NUMBER	CHIP	LOCATION	V _{CC} PIN	GND PIN
U ₀	21L02	BCZ	10	9
U ₁	21L02	CY	10	9
U ₂	21L02	CX	10	9
U ₃	21L02	CW	10	9
U ₄	21L02	CV	10	9
U ₅	21L02	CT	10	9
U ₆	21L02	CS	10	9
U ₇	21L02	CR	10	9
U ₈	21L02	BY	10	9
U ₉	21L02	BX	10	9
U ₁₀	21L02	BW	10	9
U ₁₁	21L02	BV	10	9
U ₁₂	21L02	BT	10	9
U ₁₃	21L02	BS	10	9
U ₁₄	21L02	BR	10	9
U ₁₅	21L02	BP	10	9
U ₁₆	8097	DY	16	8
U ₁₇	8097	DX	16	8
U ₁₈	8097	DW	16	8
U ₁₉	8T97	DV	16	8
U ₂₀	8T97	DT	16	8
U ₂₁	8T97	DS	16	8
U ₂₂	8097	AY	16	8
U ₂₃	8097	AX	16	8
U ₂₄	8097	AW	16	8
U ₂₅	8T97	AV	16	8
U ₂₆	8T97	AT	16	8
U ₂₇	8T97	AS	16	8
U ₂₈	74157	DR	16	8
U ₂₉	74157	DP	16	8
U ₃₀	74157	CP	16	8
U ₃₁	8160	CN	16	8
U ₃₂	7430	CN	14	7
U ₃₃	8097	AR	16	8
U ₃₄	8097	AP	16	8
U ₃₅	74161	AN	16	8
U ₃₆	74161	CM	16	8
U ₃₇	74161	BM	16	8
U ₃₈	74161	AM	16	8
U ₃₉	74154	DNM	24	12
U ₄₀	7400	DL	14	7
U ₄₁	7400	CL	14	7
U ₄₂	7400	BL	14	7
U ₄₃	7400	AL	14	7
U ₄₄	7404	DK	14	7
U ₄₅	7402	CK	14	7
U ₄₆	7402	BK	14	7
U ₄₇	7404	AK	14	7
U ₄₈	7474	CLT	14	7

BERG H-854 WIRING VIEW			
SIGNAL	PIN		SIGNAL
GND	B	A	GND
D ₁₅	D	C	D ₁₄
D ₁₃	F	E	D ₁₂
D ₁₁	J	H	D ₁₀
D ₉	L	K	D ₈
D ₇	N	M	D ₆
D ₅	R	P	D ₄
D ₃	T	S	D ₂
D ₁	V	U	D ₀
GND	X	W	GND
A ₁₅	Z	Y	A ₁₄
A ₁₃	BB	AA	A ₁₂
A ₁₁	DD	CC	A ₁₀
A ₉	FF	EE	A ₈
A ₇	JJ	HH	A ₆
A ₅	LL	KK	A ₄
A ₃	NN	MM	A ₂
A ₁	PP	QQ	A ₀
R	RR	PP	READY
T	TT	SS	INIT
SXG	UU	UU	SHARE
SHARE	VV	UU	GND

BUFFER MEMORY



VECTOR D.I.P. PLUGBOARD
PATTERN 042" X 0.1" SPACED HOLES
LA13P2 LAYOUT PAPER

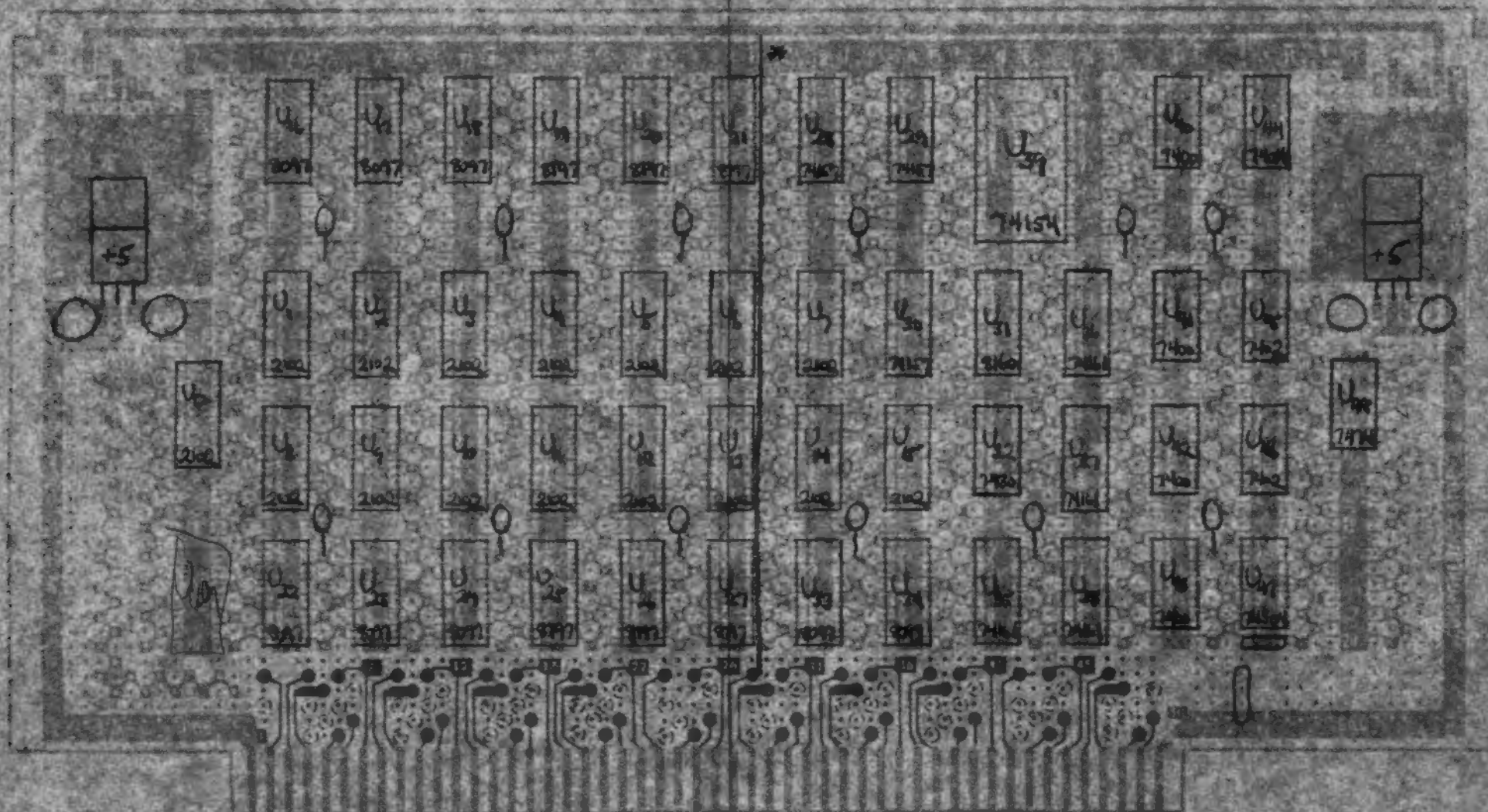
VECTOR ELECTRONIC CO., INC.
17460 GLADSTONE AVE.
SYLMAR, CALIFORNIA 91342

LA13P2

FOR 8800V SERIES MICROPROCESSOR BOARD

COMPONENT SIDE

BUFFER MEMORY



E.T.C., LTD.
BIRCHINGTON, N.Y.
9/77 R.B.
PAGE 3 OF 3

VECTOR D.I.P. PLUGBOARD
PATTERN 042" X 0.1" SPACED HOLES
LA13P2 LAYOUT PAPER

VECTOR ELECTRONIC CO., INC.
17460 GLADSTONE AVE.
SYLMAR, CALIFORNIA 91342

NOTES

1. RECOMMENDED LOCATION FOR T464 TERMINALS IN POWER AND GROUND PLANES AT ROWS 23 & 25, AND LEFT SIDE REGULATOR POSITION.
2. ZIG-ZAG BUS PADS ON POWER PLANE ARE OFFSET FROM THOSE ON GROUND PLANE.
3. DASHED CIRCLES REPRESENT CONNECTOR CONTACT PADS ON OPPOSITE SIDE OF BOARD.
4. DIPS WITH 0.3" SPAN MOUNT OVER SOLID BUS COLUMNS.
5. ZONE LETTERS A TO D ON LEFT BORDER, AND 1 TO 7 ON TOP BORDER ARE DIP ROW & COLUMN DESIGNATORS.

* POWER PLANE CUT TO SEPARATE OUTPUTS FROM TWO +5V REGULATORS

ELEMENT BUS

DON SIGNALS

1	+9V	51	+9V
2	+19V	52	-19V
3	XRDY	53	SSW DSB
4	Q1	54	EXT CLR
5	Q2	55	
6	Q3	56	BYTE
7	ETF	57	DIO8
8	CEM	58	DIO9
9	CME	59	DIO10
10	FTE	60	DIO11
11	TR	61	DIO12
12	X CLOCK	62	DIO13
13	X LOAD	63	DIO14
14	Y CLOCK	64	DIO15
15	Y LOAD	65	
16	HDTTL	66	SCTTL
17	SPARE SPARE	67	
18	STA DSB	68	MWRT
19	C/C DSB	69	PS
20	UNPROT	70	PROT
21	SS	71	RUN
22	ADD DSB	72	PRDY
23	DO DSB	73	PINT
24	Q2	74	FHOLD
25	Q1	75	PRESET
26	PHLDA	76	PSYNC
27	PWAIT	77	WE
28	PINTE	78	RE
29	A5	79	A0
30	A4	80	A1
31	A3	81	A2
32	A15	82	A6
33	A12	83	A7
34	A9	84	A8
35	D1	85	A13
36	D0	86	A14
37	A10	87	A11
38	D4	88	D2
39	D5	89	D3
40	D6	90	D7
41	DI2	91	DI4
42	DI3	92	DI5
43	DI7	93	DI6
44	SM1	94	DI1
45	SOUT	95	DI0
46	SINF	96	SINTA
47	SMEMR	97	SWO
48	SHLTA	98	SSTACK
49	CLOCK	99	POC
50	GND	100	GND

Q1	}	From BUFFER MEMORY
Q2		
Q3		
CEM		
CME	}	From BUS INDICATOR
ETF		
FTE		
TR	}	From CLOCK BOARD
WE		
A0-A9		
D0-D7		
DIO8-DIO15		

JEFF SIGNALS

X CLOCK
X LOAD
Y CLOCK
Y LOAD
HDTTL
SCTTL
WE (PWR)
RE (INVERSE PDBIN)
BYTE

NOTES

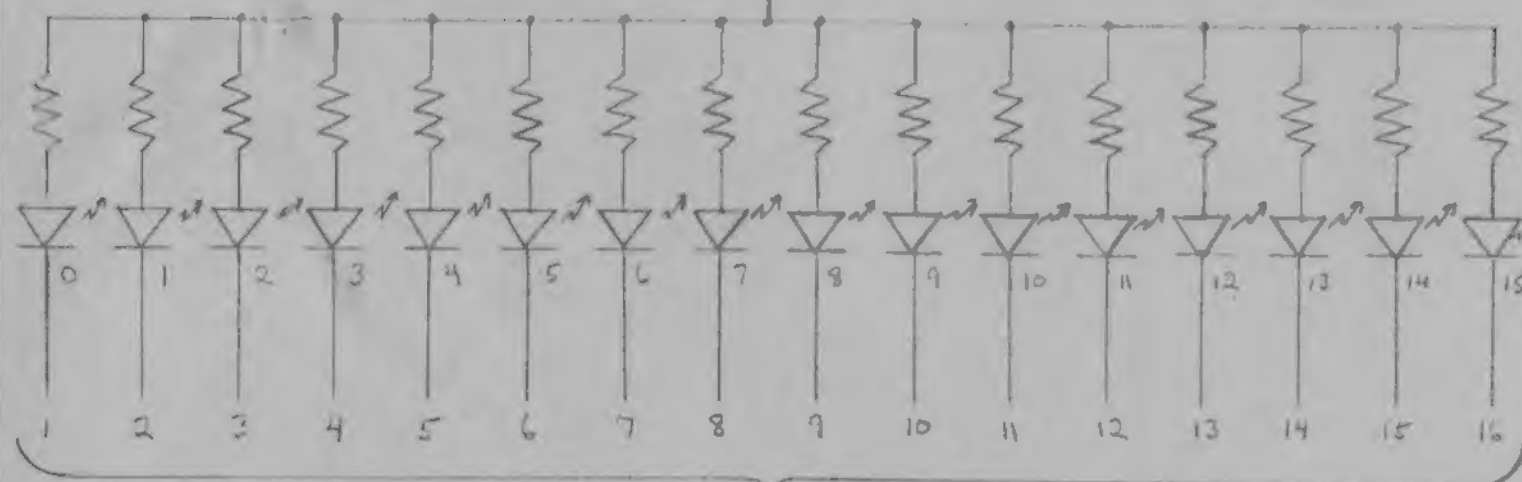
- ① PIN 17 CARRIES NEGATIVE GOING V.D. (DELETED)
TTL IS THE SAME AS YDTTL.
- ② D0-D7 ARE DATA OUT FOR ALTAIR, AND
DATA IN-OUT FOR DON'S SYSTEM.
- ③ SIGNALS OTHER THAN DON'S OR JEFF'S ARE
TAKEN FROM THE ALTAIR 9800 BUS STRUCTURE.
- ④ PINS 4-11 ARE DESIGNATED "VECTORED
INTERUPT LINES" IN THE ALTAIR BUS.
- ⑤ Q1 AND Q2 ARE DON SIGNALS THAT ARE
UNRELATED TO Q1 AND Q2 ALTAIR SIGNALS.

EXPERIMENTAL TV CENTER, LTD
BINGHAMTON, N.Y.
COMPUTER PROJECT 9/77
ELEMENT BUS R.B.

BUS INDICATOR LED PANEL

ALL RESISTORS 910 OHMS

+5V (FROM COMPUTER BUS SUPPLY)

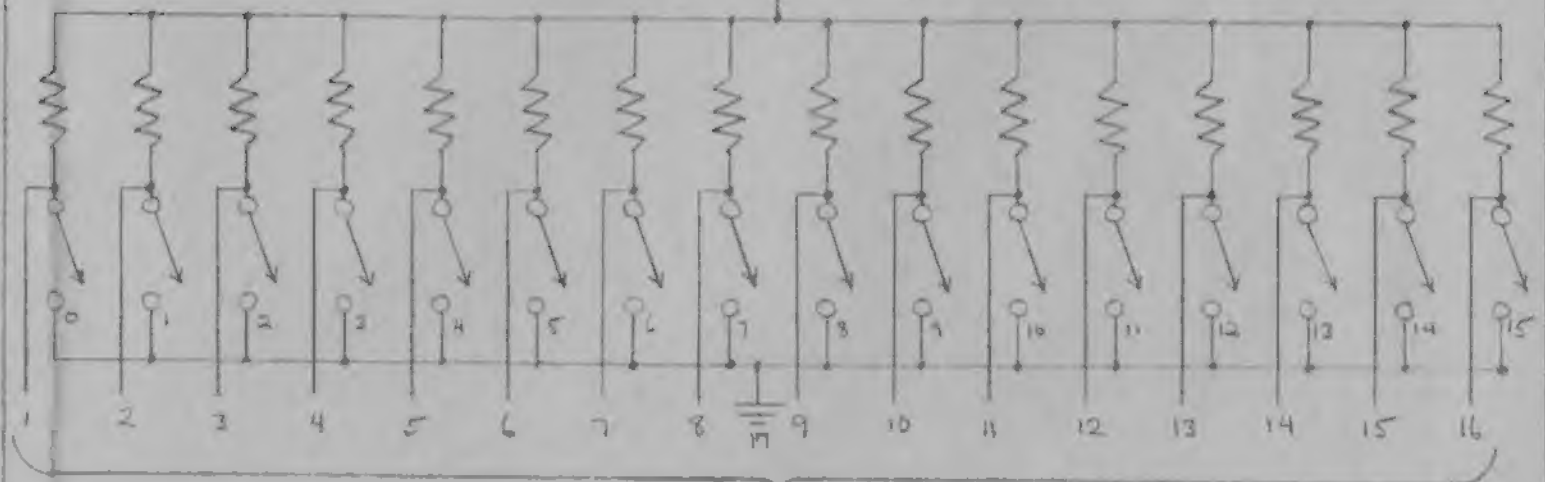


DIP PLUG

REAL TIME INPUT BOX

ALL RESISTORS 1K OHMS

+5V (PIN 18, "D" CONNECTOR)



Amphenol "D" CONNECTOR

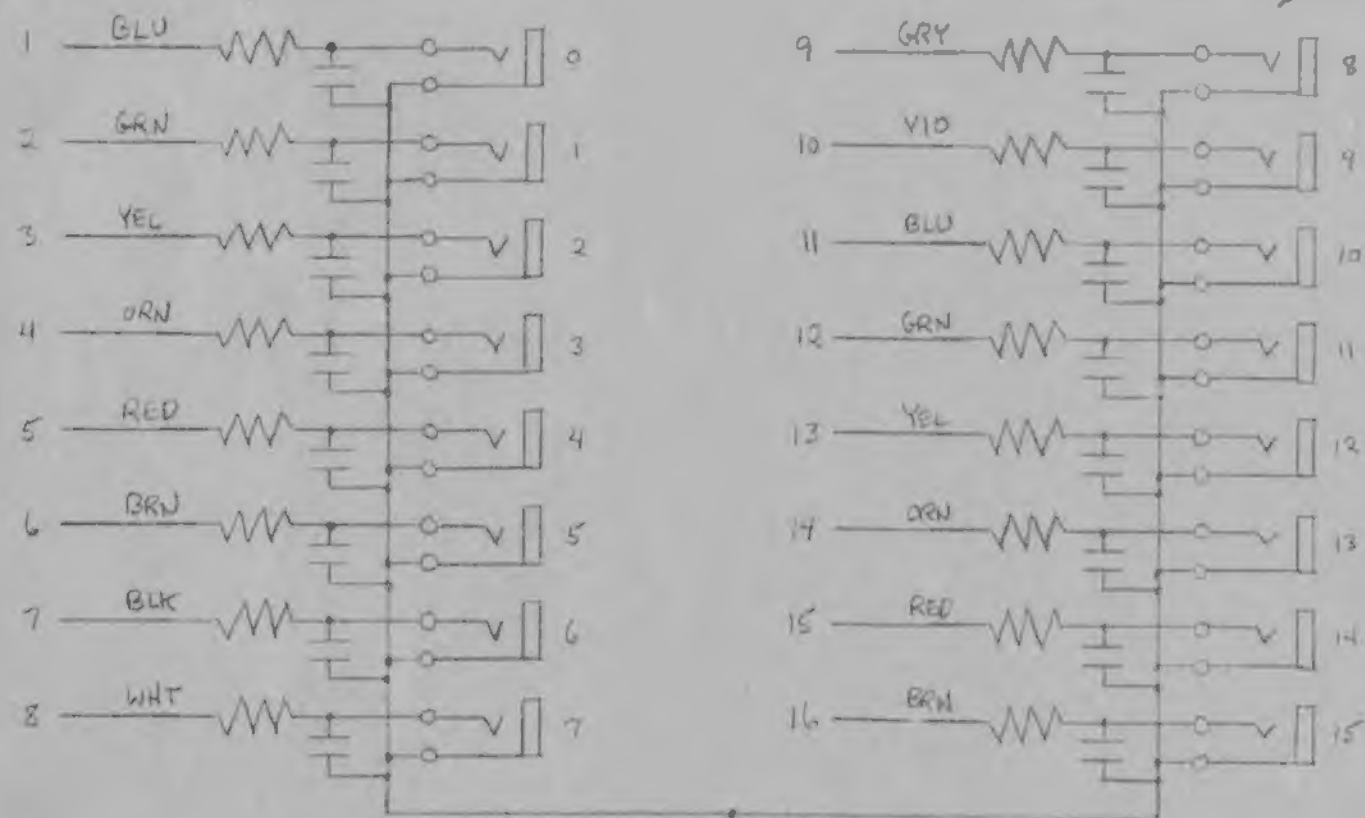
D/A OUTPUT PANEL

(MINIATURE PHONE JACKS)

.01

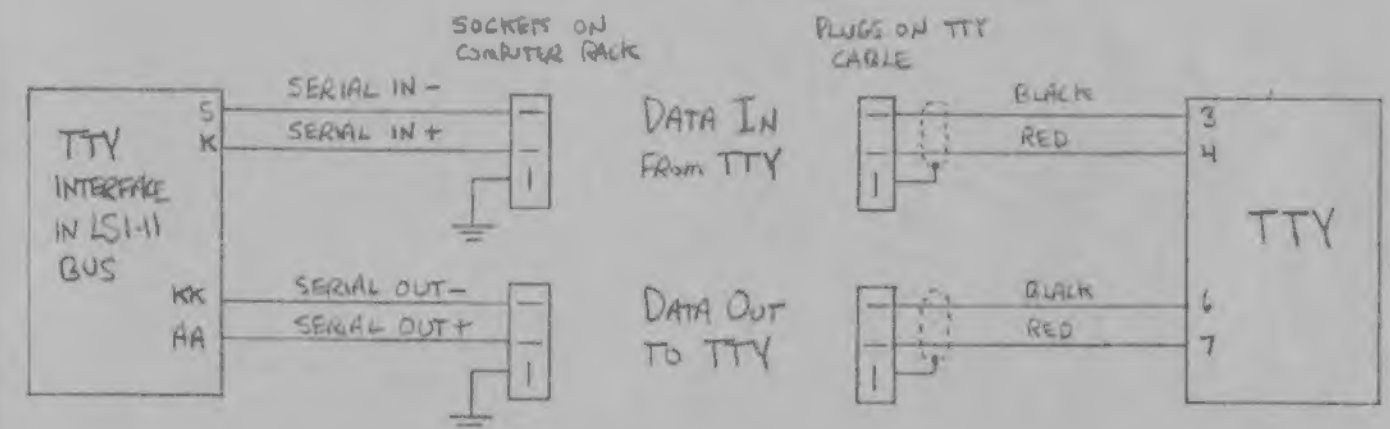
16-PIN DIP PLUG, ALL RESISTORS 1K OHMS

16 PIN DIP PLUG, ALL CAPACITORS .01



GROUNDING DIRECTLY TO D/A BOARD

TTY CONNECTIONS



EXPERIMENTAL TV CENTER, LTD.
BINGHAMTON, N.Y.
COMPUTER PROJECT

MISC. RACK WIRING
9/77 R.B.

U ₁ 8838	U ₆ 8837	U ₁₁ 8838	U ₁₆ 8838	U ₂₁ 8838
U ₂ 7473	U ₇ 7404	U ₁₂ 74174	U ₁₇ 74174	U ₂₂ 8838
U ₃ 7402	U ₈ 7400			U ₂₃ 8160
U ₄ 7402	U ₉ 7400	U ₁₄ 7400		U ₂₄ 8097
U ₅ 7400	U ₁₀ 8097	U ₁₅ 8097	U ₂₀ 8097	U ₂₅ 8097

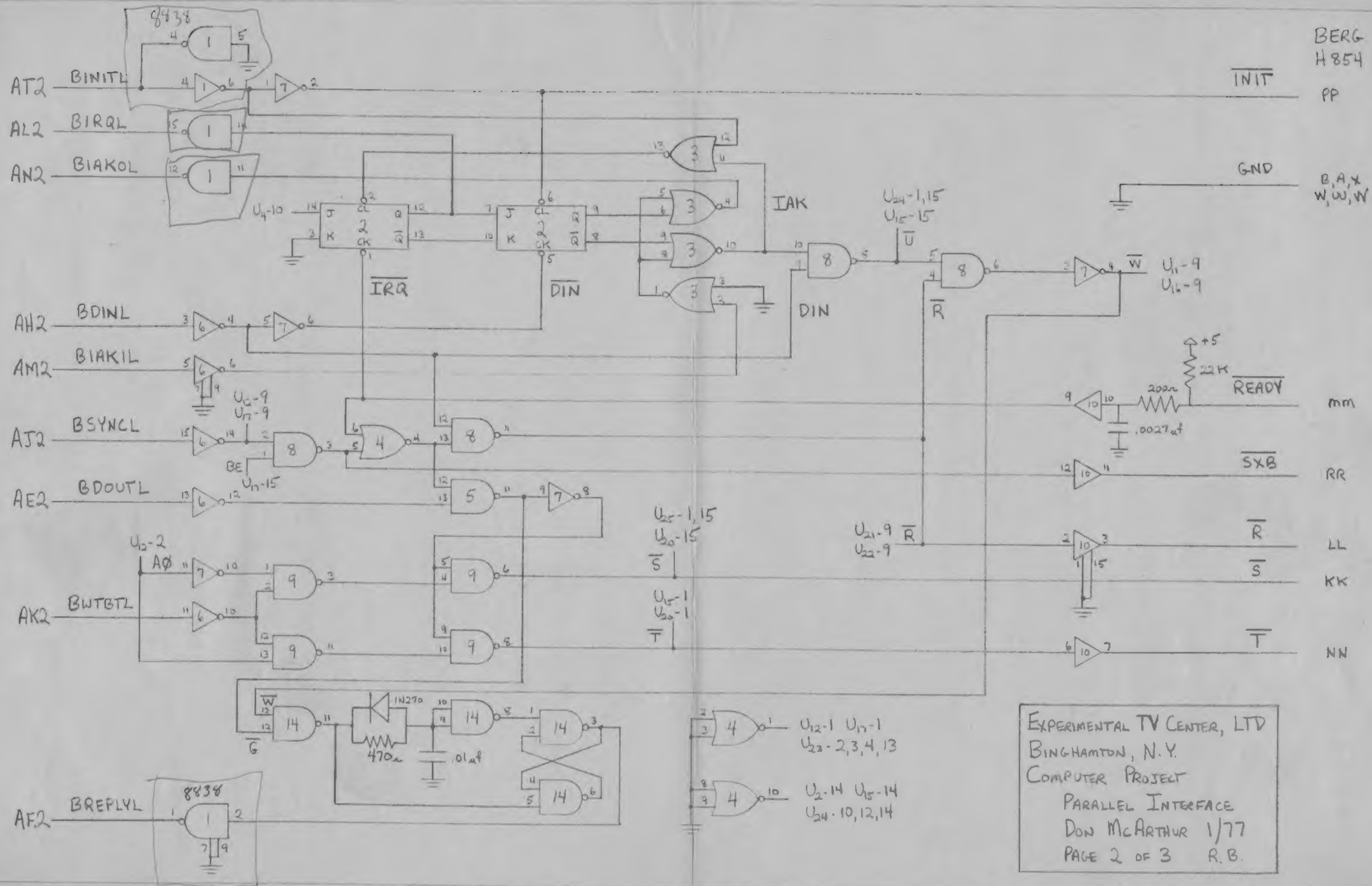
Berg H-854

3182 18188 0x>L 22 11400
000000000000000000000000

[Faint, illegible markings]

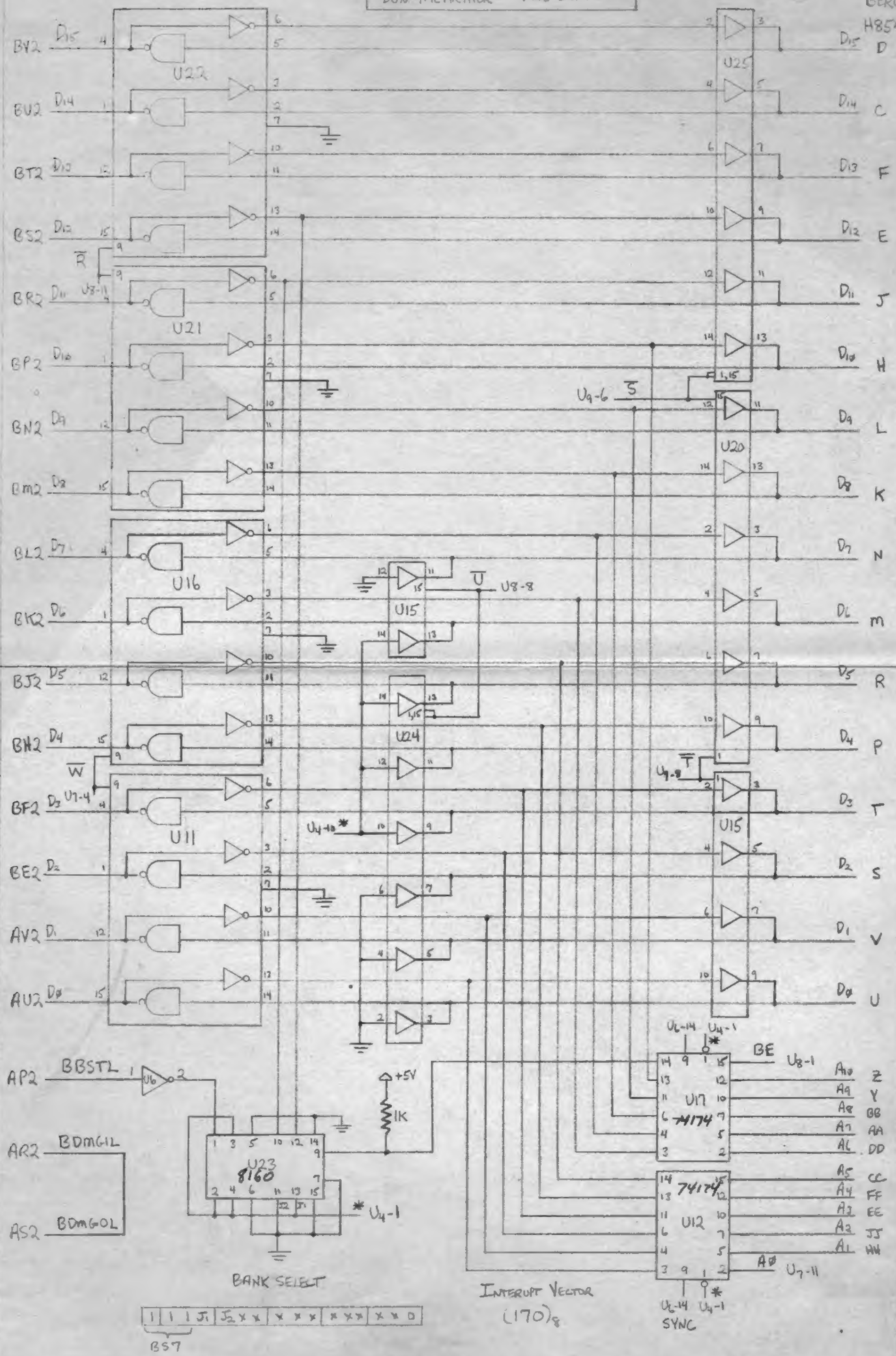
QUANTITY	DESCRIPTION	Vcc PIN	GND PIN
4	SN7400N QUAD 2-INPUT NAND	14	7
2	SN7402N QUAD 2-INPUT NOR	14	7
1	SN7404N HEX INVERTER	14	7
1	SN7473N DUAL JK MASTER/SLAVE FLIP FLOP	4	11
2	SN74174N HEX D FLIP FLOP WITH CLEAR	16	8
5	DM8097N TRI-STATE HEX BUFFER	16	8
1	DM8160N 6-BIT COMPARETER	16	8
1	DM8837N HEX UNIFIED BUS RECEIVER	16	8
5	DM8838N QUAD UNIFIED BUS TRANSCEIVER	16	8
1	DIGITAL W943 PROTOBOARD		
1	BERG H854 CONNECTOR		
1	1N270 GERMANIUM DIODE		
1	200 Ω 1/4 WATT RESISTOR		
1	470 Ω " "		
1	K " "		
1	22K " "		
1	51 μ F DISK CAPACITOR		
1	0027 μ F " "		

EXPERIMENTAL TV CENTER, LTD
BINGHAMTON, N.Y.
COMPUTER PROJECT
PARALLEL INTERFACE
DON McARTHUR 1/77
PAGE 1 OF 3 R.B

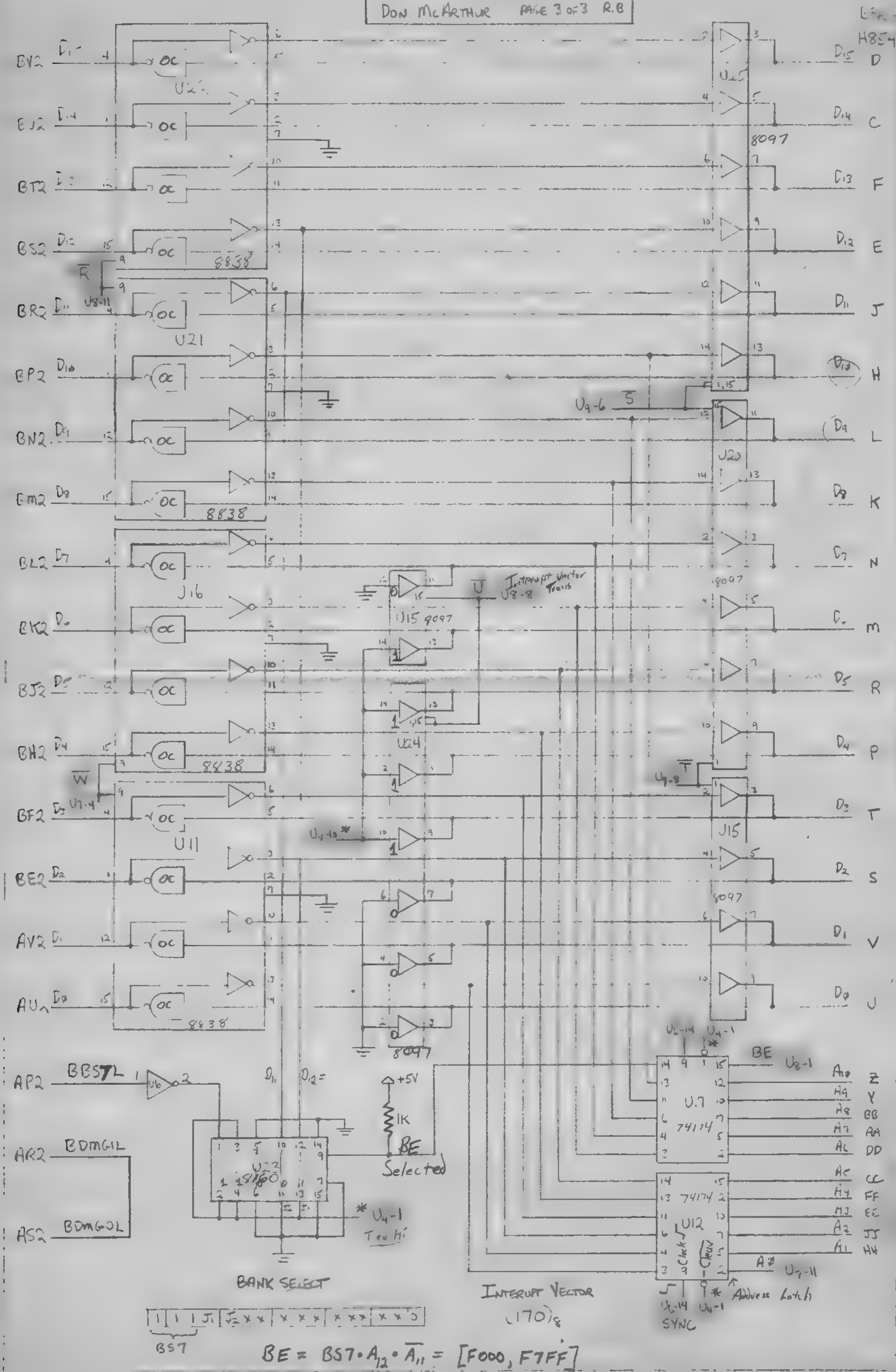


EXPERIMENTAL TV CENTER, LTD
 PARALLEL INTERFACE 1/77
 DON McARTHUR PAGE 3 OF 3 R.B

BERG
 H854
 D



EXPERIMENTAL TV CENTER, LTD
 PARALLEL INTERFACE 1/77
 DON McARTHUR PAGE 3 OF 3 R.B



1 ELEMENT RTI DIP
SOCKET, BM

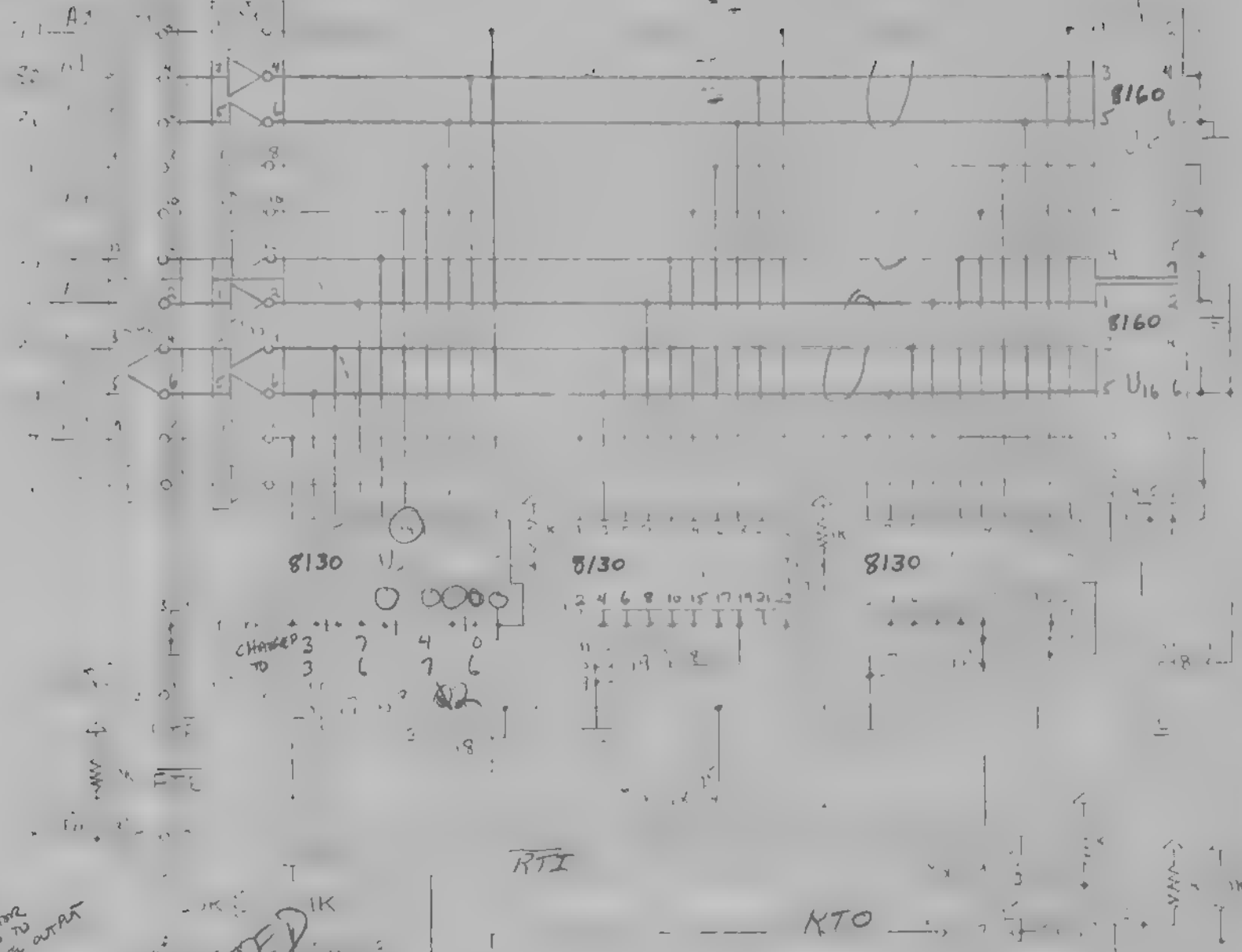
74204

74204
~~74204~~

74175

RTD LED'S
RTI

74204 74204



Available
Clipped to
Pins 17
18

DELETED

EXPERIMENTAL TV CENTER, LTD
BINGHAMTON, N.Y.

COMPUTER PROJECT:

BUS INDICATOR BOARD, PAGE 1 OF 3

LON M. ARTHUR 8/77 R.E.

8097

Note: Q socket is for leds
Q socket modified for Jones switcher control

PARTS LIST

1	VECTOR 8800V UNIVERSAL 100-PIN PLUG-BOARD
12	16-PIN DIP WIRE WRAP SOCKETS
13	14-PIN DIP " "
3	24-PIN DIP
1	HEAT SINK FOR REGULATOR
1	LM340T-5 REGULATORY
1	2N3904 NPN TRANSISTOR
1	SN7400N QUAD 2-INPUT NAND
1	SN7401N QUAD 2-INPUT NAND WITH OPEN COLLECTOR
1	SN7410N TRIPLE 3-INPUT NAND
5	SN7404N HEX INVERTER
5	SN74104N HEX INVERTER
4	SN74175N QUAD D FLIP FLOP
3	DM8097N TRI-STATE HEX BUFFER
3	DM8160N 10-BIT COMPARATOR
2	DM8160N 6-BIT COMPARATOR
3	22uf 25V ELECTROLYTIC CAPACITOR
3	.1uf 35V TANTALUM CAPACITOR
10	.01uf 100V MYLAR CAPACITOR
6	1K 1/4 WATT RESISTOR
1	2K 1/4 WATT RESISTOR
1	20K 1/4 WATT RESISTOR

U	Part	IC	Pin	Pin
U ₁	74L04	AV	4	7
U ₂	74L04	AT	4	7
U ₃	74L04	AV	14	7
U ₄	74L04	AF	7	7
U ₅	74L04	AL	14	7
U ₆	7404	EV	14	7
U ₇	7404	ET	14	7
U ₈	7404	EV	14	7
U ₉	7404	ET	14	7
U ₁₀	7404	ET	14	7
U ₁₁	74175	CV	8	8
U ₁₂	74175	CV	16	8
U ₁₃	74175	CT	16	8
U ₁₄	74175	CT	16	8
U ₁₅	8160	CV	16	8
U ₁₆	8160	CV	16	8
U ₁₇	7400	CV	14	7
U ₁₈	7403	CV	14	7
U ₁₉	7410	CV	14	7
U ₂₀	8130	CV	24	12
U ₂₁	8130	CV	24	12
U ₂₂	8130	CV	24	12
U ₂₃	8097	AV	8	8
U ₂₄	8097	AV	8	8
U ₂₅	8097	AV	16	8

BUFFER MEMORY ADDRESS MAP

170030	
170040	
170076	
	BUS INDICATOR
173676	
173742	FA START (U ₂₀)
173770	REAL TIME INPUT (U ₂₂)
	FA STOP (U ₂₁)
	STATUS REGISTER

THE FOUR UNITS ON THE BOARD ARE:

1. BUS INDICATOR CIRCUIT
2. BUFFER MEMORY ADDRESS CONTROLLER
3. REAL-TIME INPUT CIRCUIT
4. V.D TO TTL CONVERTER

EXPERIMENTAL TV CENTER, LTD
BINGHAMTON, N.Y.

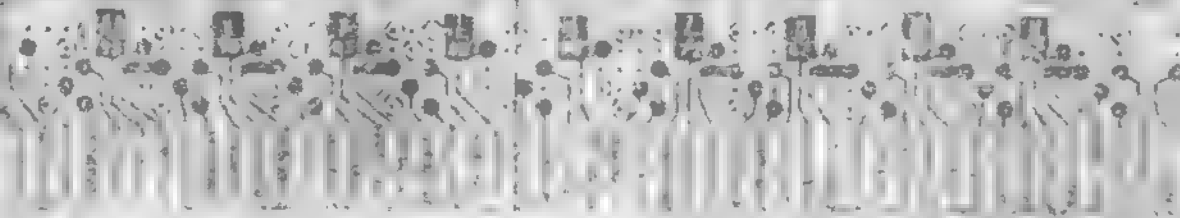
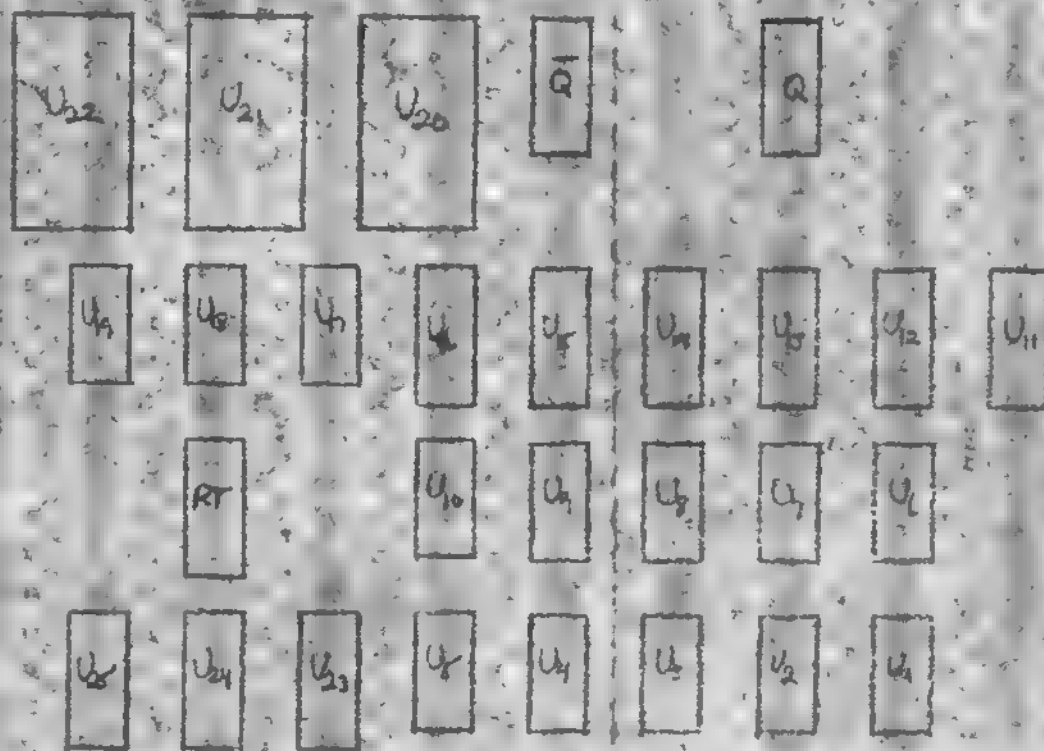
BUS INDICATOR BOARD 8/77

CON MCARTHUR

PAGE 2 - R.B



BUS INDICATOR



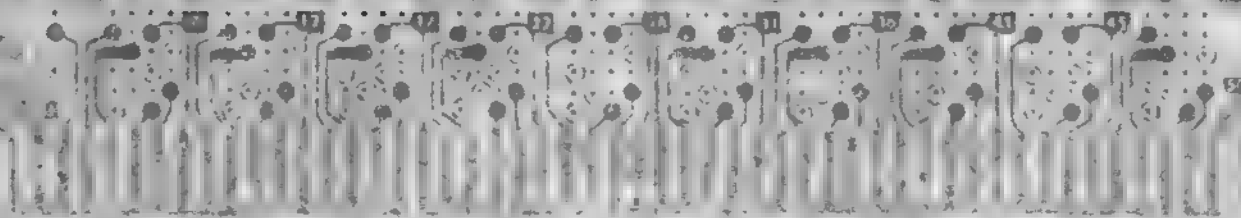
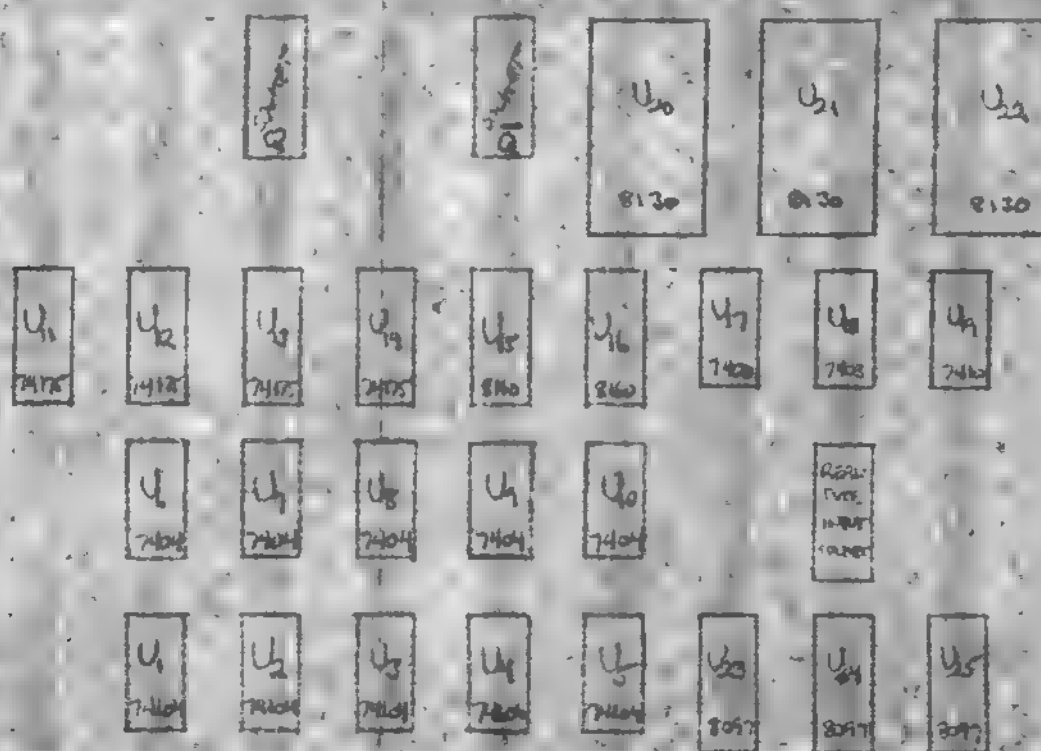
VERTICAL PLUGS
0.042" DIA. SPACED HOLES
0.015" DIA. TAPER

LA13P1

FOR 8000 SERIES MICROPROCESSOR BOARD

COMP. SIDE

BUS INDICATOR



ETC, LTD.
BINGHAMTON, N.Y.
8/77 R.B.
PAGE 3 OF 3

NOTES

5. ALL MOUNTING PLACEMENT FOR THE TERMINALS IN POWER PLANE AND GROUND PLANE AT ROW 1 & 2, AND LEFT SIDE MOUNTING PLACEMENT.

6. ZIG ZAG BUS SCALES, POWER PLANE, DIFFERENT FROM THOSE IN GROUND PLANE.

7. ALL THREE PLACES FOR THE TERMINALS IN POWER PLANE AND GROUND PLANE.

8. THIS BOARD IS A STANDARD BOARD, 100% TESTED.

9. ZIG ZAG BUS SCALES, POWER PLANE, DIFFERENT FROM THOSE IN GROUND PLANE.

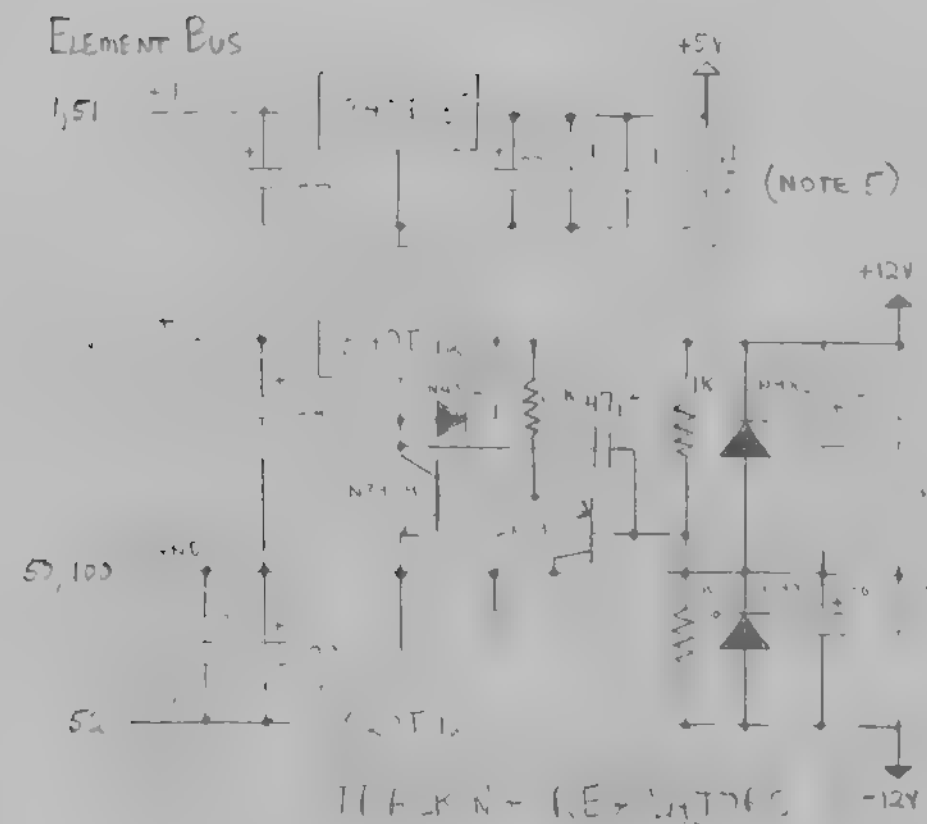
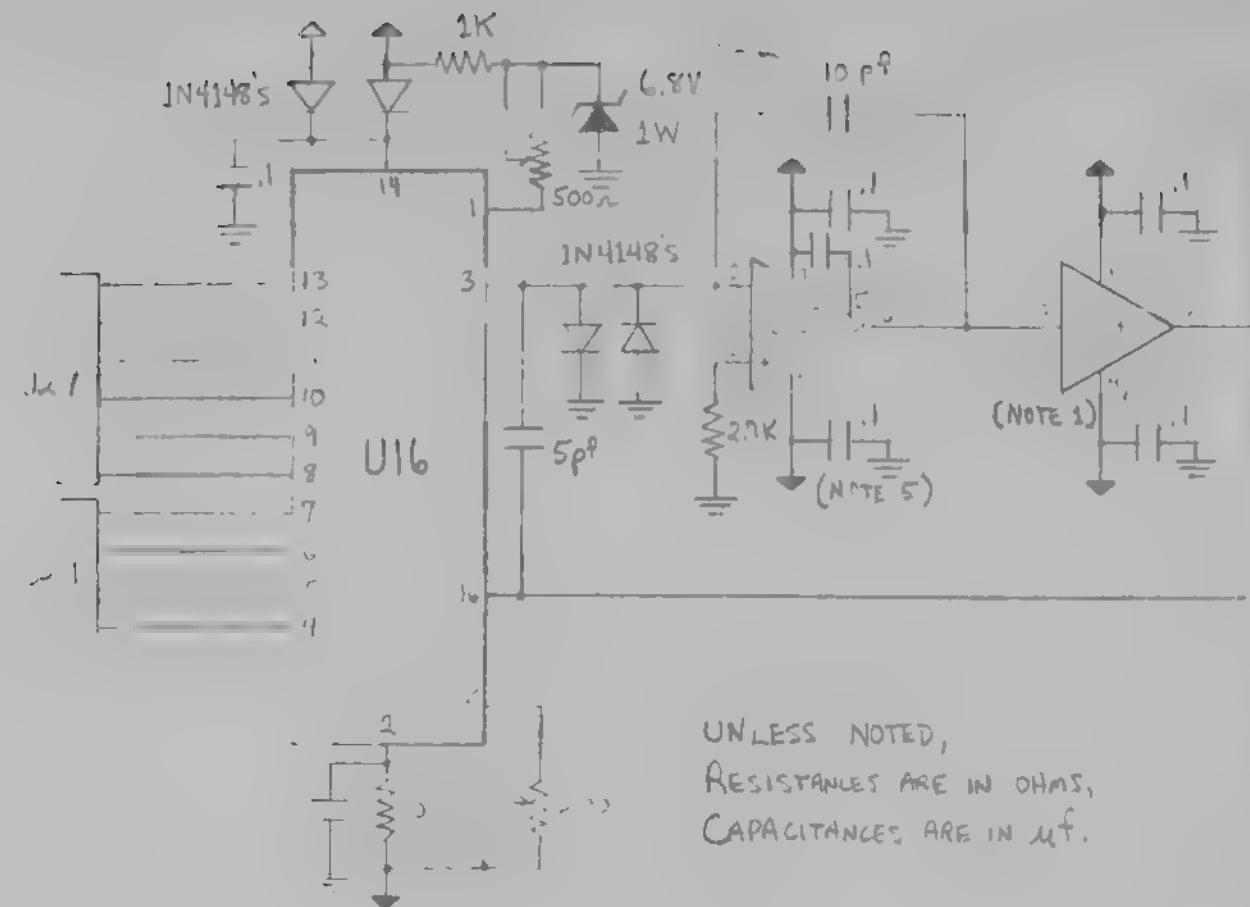
VERTICAL PLUGS
PATTERN 042 - 0.042" DIA. SPACED HOLES
LA13P1 LAYOUT PAPER

VERTICAL PLUGS
PATTERN 042 - 0.042" DIA. SPACED HOLES
LA13P1 LAYOUT PAPER

U28 (ALL 2K) R PAK



EXPERIMENTAL TV CENTER, LTV.
BIRMINGHAM, N.Y. (PAGE 174)
D/A BOARD, DIGITAL SECTION
DON McARTHUR 8/77 R.B



NOTES:

- 1) U14 (LH002CN) IS A 10-PIN DIP.
- 2) U10-U12 ARE CONFIGURED SIMILARLY TO U9.
- 3) U2-U8 ARE CONFIGURED SIMILARLY TO U1, WHICH CONSISTS OF 2 LM307N CHIPS IN ONE 16-PIN SOCKET.
- 4) SEE DESCRIPTION OF D/A OUTPUT PANEL.
- 5) .1 μf TANTALUM CAPACITORS ARE PLACED CLOSE TO POWER SUPPLY PINS OF ALL ANALOG CHIPS.

EXPERIMENTAL TV CENTER, LTD
BINGHAMTON, N.Y.

D/A BOARD (PAGE 2 OF 4)

ANALOG SECTION

DON McARTHUR 8/77 R.B.

PART LIST

1	VECTOR 8800V UNIVERSAL 100-PIN PLUG-BOARD
26	16-PIN DIP WIRE WRAP SOCKETS
8	14-PIN DIP " " "
1	24-PIN DIP
3	HEAT SINKS
1	LM340T-5 VOLTAGE REGULATOR CHIP
1	LM340T-12 " " "
1	LM320T-12 " " "
1	2N3904 TRANSISTOR (NPN)
1	2N3906 " (PNP)
1	1N4148 DIODES
3	1N4002 DIODES
1	6.8V 1WATT ZENER DIODE
1	SN7400N QUAD 2-INPUT NAND
6	SN7404N HEX INVERTER
3	SN7489N 64-BIT RAM
1	SN74123N MONOSTABLE MULTIVIBRATOR
1	SN74154N 4-LINE TO 16-LINE DEMULTIPLEXER
1	SN74157N QUAD 2:1 DATA SELECTOR
1	SN74161N BINARY COUNTER
1	DM8131N 6-BIT UNIFIED BUS COMPARATOR
3	DM8837N HEX UNIFIED BUS RECEIVER
1	DAC100 10-BIT D/A
1	LM318N HIGH SPEED OP AMP
1	LH0002CN CURRENT AMP
3	AH0015CD QUAD ANALOG SWITCH
16	LM307N OP AMP

CAPACITORS

2	100uf 25V ELECTROLYTIC
4	22uf 25V " "
1	1uf 50V " "
38	.1uf 35V TANTALUM
1	.05uf DISK
1	.01uf MYLAR
16	.0047uf "
2	.0027uf DISK
1	47pf "
1	10pf "
1	5pf "

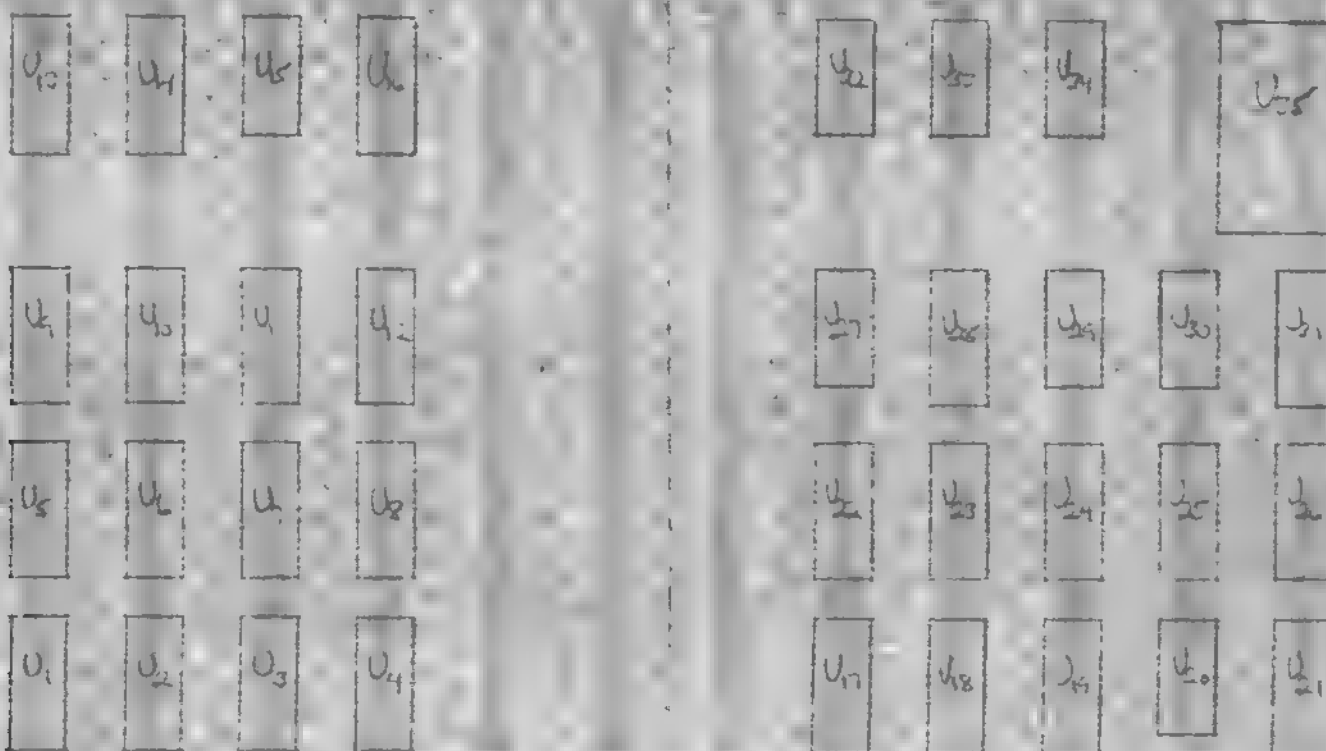
RESISTORS

2	1K 1/2WATT 1%
1	12K 1/4WATT 5%
1	10K "
1	6.8K "
1	27K "
1	1K "
1	100ohm "
1	82ohm "
1	10ohm "
1	500ohm TRIMPOT
1	200ohm "

NUMBER	CHIP	LOCATION	+12 PIN	-12 PIN	+5 PIN	GND PIN
U1	2-307	AK	11,15	4,8		
U2	2-307	AL	11,15	4,8		
U3	2-307	AM	11,15	4,8		
U4	2-307	AN	11,15	4,8		
U5	2-307	BK	11,15	4,8		
U6	2-307	BL	11,15	4,8		
U7	2-307	BM	11,15	4,8		
U8	2-307	BN	11,15	4,8		
U9	AH0015	CK	4	13	14	3
U10	AH0015	CL	4	13	14	3
U11	AH0015	CM	4	13	14	3
U12	AH0015	CN	4	13	14	3
U13	OUT SOCKET	DK				
U14	LH0002	DL	1,2	4,5		
U15	LM318	DM	7	4		
U16	DAC100	DN	14	2		
U17	8837	AT			16	8
U18	8837	AV			16	8
U19	8837	AW			16	8
U20	7400	AX			14	7
U21	8131	AY			16	8
U22	7489	BT			16	8
U23	7484	BV			16	8
U24	7489	BW			16	8
U25	74157	BX			16	8
U26	74161	BY			16	8
U27	7404	CT			14	7
U28	7404	CV			16	
U29	7404	CW			14	7
U30	7404	CX			14	7
U31	74123	CY			16	8
U32	7404	DT			14	7
U33	7404	DV			14	7
U34	7404	DW			14	7
U35	74154	DX			24	12

EXPERIMENTAL TV CENTER, LTD., BINGHAMTON, N.Y.
 COMPUTER PROJECT : D/A BOARD (PAGE 3 OF 4)
 DON McARTHUR 8/77 R.B.

D/A



2 ZONE LETTERS A D

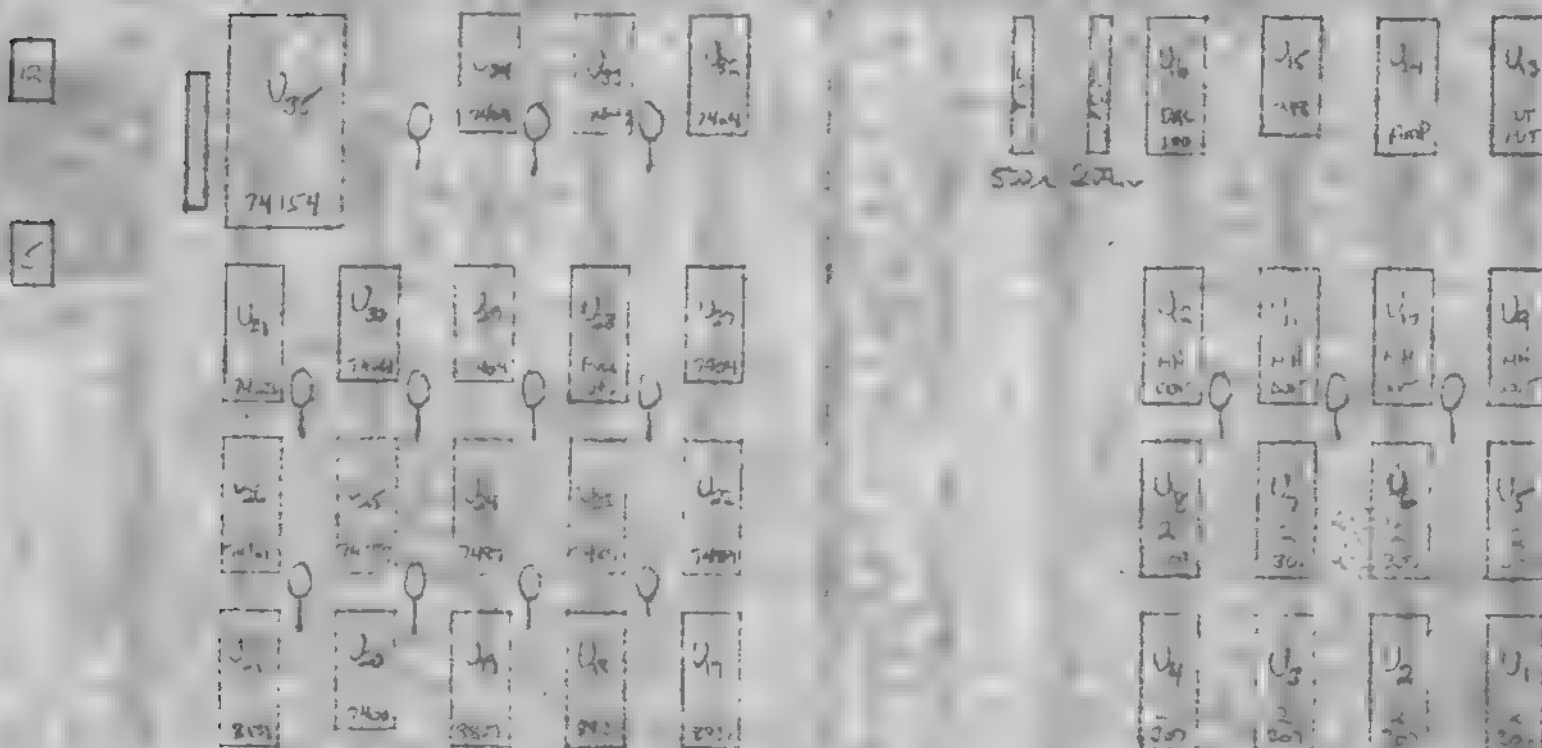
AND

VECTOR D.C. PLUGBOARD
PATTERN 642" x 0.3" SPACED HOLES
LAYER 2 LAYOUT PAPER

FOR

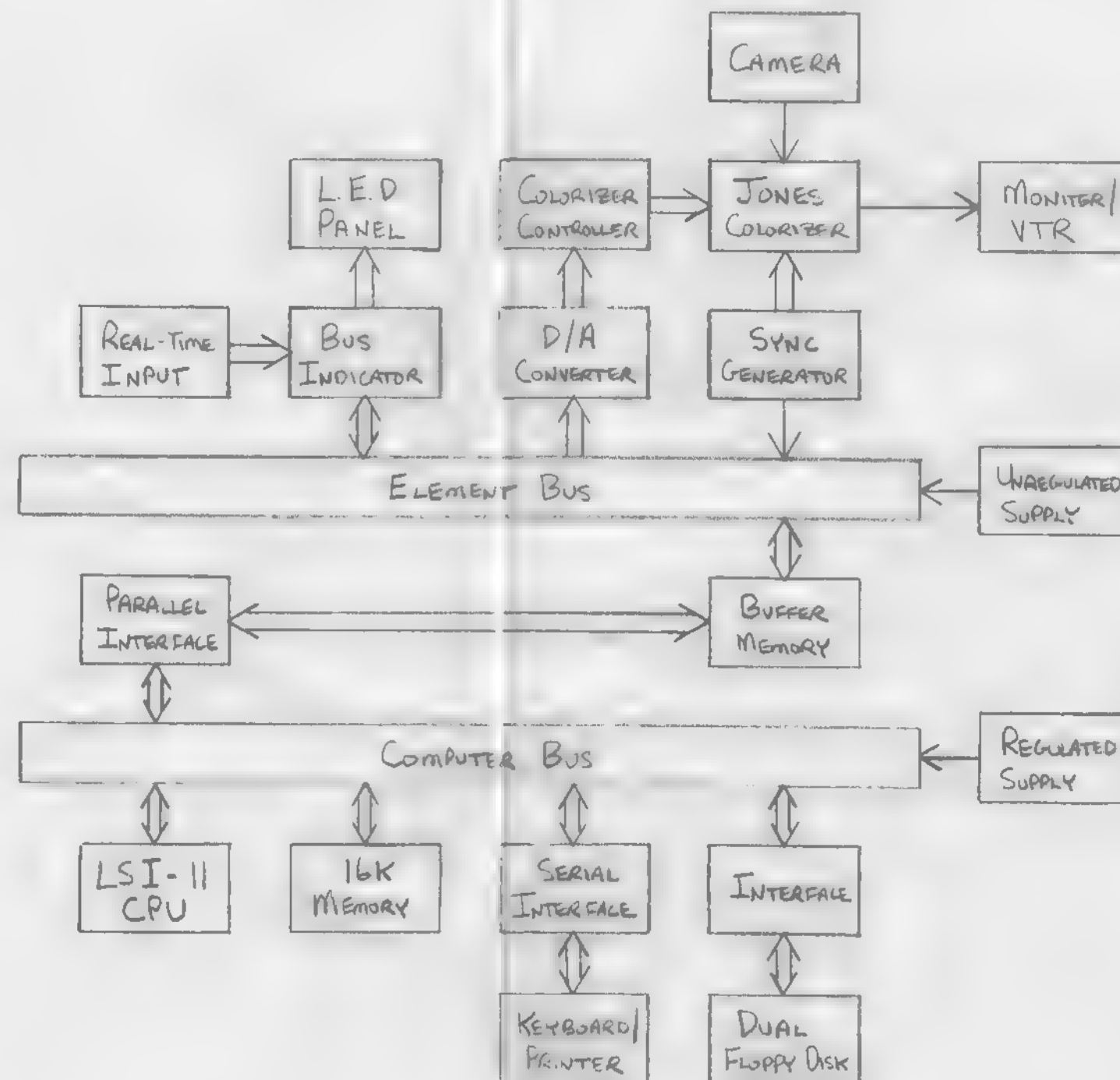
IFS

D/A



ETC., LTD.
BIRMINGHAM, NY
8/77 R.E.
H-E 4 OF 4

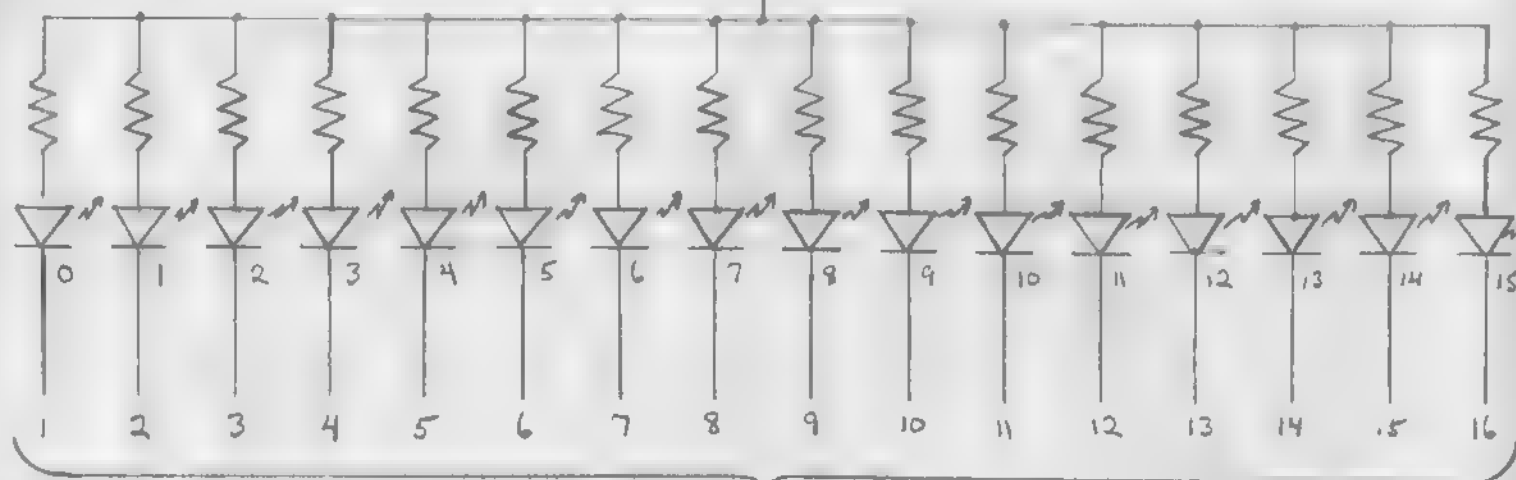
EXPERIMENTAL TV CENTER, LTD.
 BINGHAMTON, N.Y.
 COMPUTER - BASED
 PROCESSING VIDEO SYNTHESIZER
 SYSTEM DIAGRAM, 9/77 R.B.



BUS INDICATOR LED PANEL

ALL RESISTORS 910 OHMS

+5V (FROM COMPUTER BUS SUPPLY)

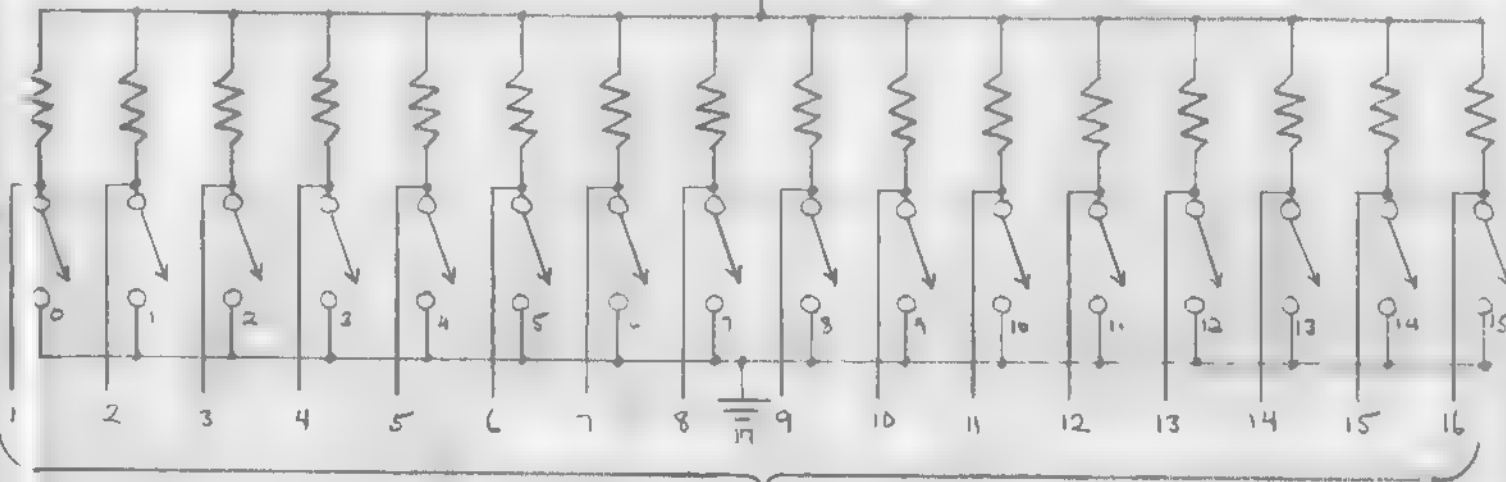


DIP PLUG

REAL TIME INPUT BOX

ALL RESISTORS 1K OHMS

+5V (AN 18 "D" CONNECTOR)



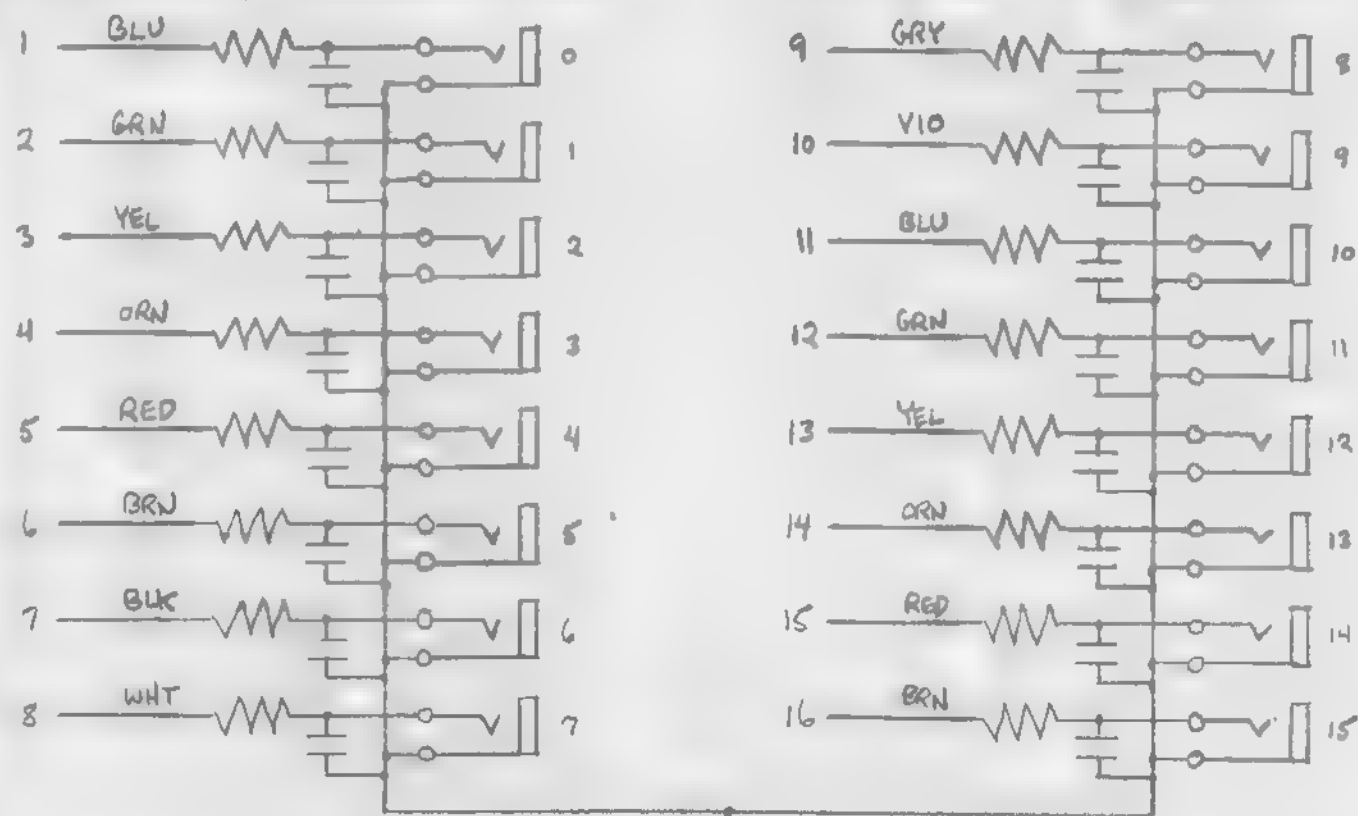
AMPHENOL "D" CONNECTOR

D/A OUTPUT PANEL

(MINIATURE PHONE JACKS)

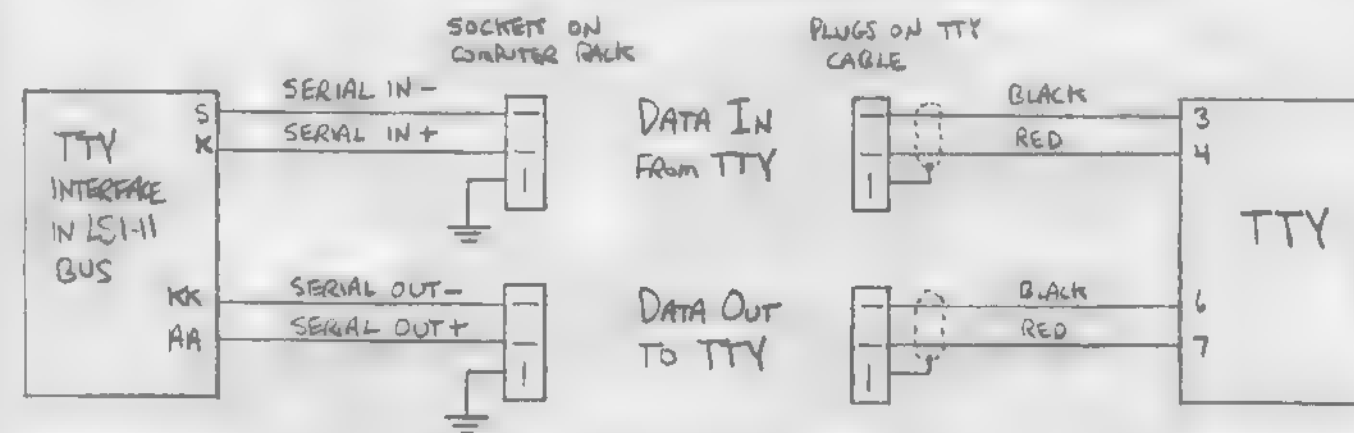
16-PIN DIP PLUG, ALL RESISTORS 1K OHMS

16 PIN DIP PLUG, ALL CAPACITORS .01 uF



GROUNDING DIRECTLY TO D/A BOARD

TTY CONNECTIONS (OBSOLETE 7/78)



EXPERIMENTAL TV CENTER, LTD.
BINGHAMTON, N.Y.
COMPUTER PROJECT

MISC. RACK WIRING
9/77 R.B.

ELEMENT BUS

DON SIGNALS

1	+9V	51	+9V
2	+19V	52	-19V
3	XRDY	53	SSW DSB
4	Q1	54	EXT CLR
5	Q2	55	
6	Q3	56	BYTE
7	ETF	57	DIO8
8	CEM	58	DIO9
9	CME	59	DIO10
10	FTE	60	DIO11
11	TR (VDTTL)	61	DIO12
12	X CLOCK	62	DIO13
13	X LOAD	63	DIO14
14	Y CLOCK	64	DIO15
15	Y LOAD	65	
16	HDTTL	66	SCTTL
17		67	
18	STA DSB	68	MWRT
19	C/C DSB	69	PS
20	UNPROT	70	PROT
21	SS	71	RUN
22	ADD DSB	72	PRDY
23	DO DSB	73	PINT
24	Q2	74	PHOLD
25	Q1	75	PRESET
26	PHLDA	76	PSYNC
27	PWAIT	77	WE
28	PINTE	78	RE
29	A5	79	A0
30	A4	80	A1
31	A3	81	A2
32	A15	82	A6
33	A12	83	A7
34	A9	84	A8
35	D1	85	A13
36	D0	86	A14
37	A10	87	A11
38	D4	88	D2
39	D5	89	D3
40	D6	90	D7
41	DI2	91	DI4
42	DI3	92	DI5
43	DI7	93	DI6
44	SM1	94	DI1
45	SOVT	95	DI0
46	SINP	96	SINTA
47	SMEMR	97	SWO
48	SHLTA	98	SSTACK
49	CLOCK	99	POC
50	GND	100	GND

Q1	}	From Buffer Memory
Q2		
Q3		
CEM		
CME	}	From BUS Indicator
ETF		
FTE		
TR		- From clock

A0 - A9
D0 - D7
DIO8 - DIO15

JEFF SIGNALS

X CLOCK
X LOAD
Y CLOCK
Y LOAD
HDTTL
SCTTL
WE (PWR)
RE (INVERSE PDBIN)
BYTE

NOTES

- ① ~~PIN 17 CHARGES NEGATIVE GOING V0, TR IS THE SAME AS VDTTL.~~
- ② D0 - D7 ARE DATA OUT FOR ALTAIR, AND DATA IN-OUT FOR DON'S SYSTEM.
- ③ SIGNALS OTHER THAN DON'S OR JEFF'S ARE TAKEN FROM THE ALTAIR 8800 BUS STRUCTURE.
- ④ PINS 4-11 ARE DESIGNATED "VECTORED INTERRUPT LINES" IN THE ALTAIR BUS.
- ⑤ Q1 AND Q2 ARE DON SIGNALS THAT ARE UNRELATED TO Q1 AND Q2 ALTAIR SIGNALS.

EXPERIMENTAL TV CENTER, LTD.
BINGHAMTON, N.Y.
COMPUTER PROJECT 9/77
ELEMENT BUS R.B.

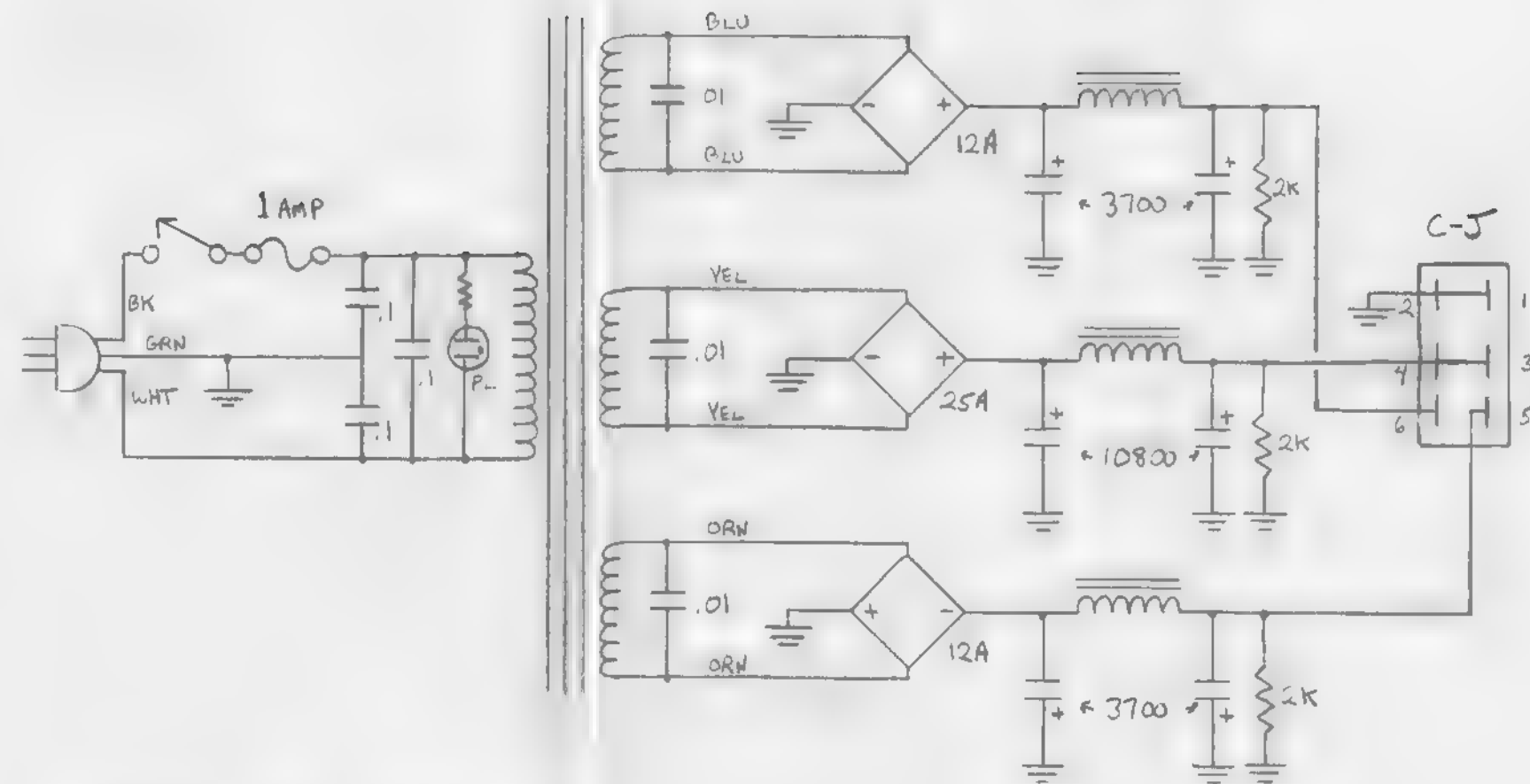
EXPERIMENTAL TV CENTER, LTD.
 BINGHAMTON, N.Y.
 COMPUTER PROJECT
 ELEMENT BUSS POWER SUPPLY
 6/77 RICH BREWSTER
 PAGE 1 OF 1

PARTS LIST:

- TRANSFORMER - BASLER BE12696-001
 2 BRIDGE RECTIFIERS 200 PIV 12AMP
 1 BRIDGE RECTIFIER 400 PIV 25AMP
 3 CHOKES, 20 AMP, $\leq .05 \text{ ohm}$
 4 CAPACITORS, 3700 MFD AT 75V
 2 CAPACITORS, 10800 MFD AT 20V
 3 RESISTORS, 2000 ohm $\frac{1}{2}$ WATT
 1 FUSEHOLDER w/ 1AMP SLO-BLO FUSE
 3 CAPACITORS, .01 MFD 100V MYLAR
 3 CAPACITORS, .1 MFD 600V
 1 NEON PILOT LAMP ASSEMBLY
 1 S.P.S.T. TOGGLE SWITCH, 6AMP 120V
 1 LINE CORD, 3 WIRE, 120V
 1 CINCH-JONES CONNECTOR, 6 PIN,
 CHASSIS MOUNTED FEMALE
 1 ALUMINUM CHASSIS 3"x7"x15"

CABLE PARTS:

- 1 C-J MALE, CABLE MOUNT, 6 PIN
 1 C-J FEMALE, CABLE MOUNT, 6 PIN
 10' 7-CONDUCTOR, 18 GAUGE CABLE



CONNECTOR	CABLE	VOLTAGE	CURRENT
1,2	BLK, GRN, BRN	GND	
3,4	WHT, RED	+9V	6A
5	BLU*	-19V	2A
6	ORN*	+19V	2A

* NOTE - THESE ARE THE CABLE COLORS, NOT THE TRANSFORMER LEADS WHICH HAPPEN TO BE THE OPPOSITE COLORS.

EXPERIMENTAL TV CENTER, LTD.
 BINGHAMTON, N.Y.
 COMPUTER PROJECT 9/77 R.B.
 BUFFER MEMORY, PAGE 2 OF 3

PARTS LIST:

1 VECTOR 8800V UNIVERSAL 100-PIN RUGBOARD
 38 16-PIN DIP WIRE WRAP SOCKETS
 10 14-PIN " " " "
 1 24-PIN " " " "
 4 HEAT SINKS
 1 BERG H-854 40-PIN CONNECTOR
 2 LM340T-5 REGULATOR
 4 SN7400N QUAD 2-INPUT NAND
 2 SN7402N QUAD 2-INPUT NOR
 1 SN7404N HEX INVERTER
 1 SN7404N SCHOTTKY HEX INVERTER
 1 SN7430N 8-INPUT NAND
 1 SN7474N DUAL D FLIP FLOP
 1 SN74154N 4-LINE TO 16-LINE DECODER
 3 SN74157N QUAD 2:1 DATA SELECTOR
 4 SN74161N ASYNCHRONOUS 4-BIT COUNTER
 8 DM8097N TRI-STATE HEX BUFFER
 6 N8T97N HIGH-SPEED TRI-STATE HEX BUFFER
 1 DM8160N 6-BIT COMPARATOR
 16 21L02 LOW POWER 1024x1 STATIC RAM
 2 22 μ F 25V ELECTROLYTIC CAPACITORS
 2 10 μ F 50V " "
 12 .1 μ F 35V TANTALUM " "
 1 .01 μ F 100V MYLAR " "
 1 .002 μ F " DISK " "
 1 .001 μ F " " " "
 1 330 pF " SILVER MICA " "
 2 51 Ω 1/4 WATT RESISTORS
 3 100 Ω " " "
 3 1K " " "
 3 10K " " "

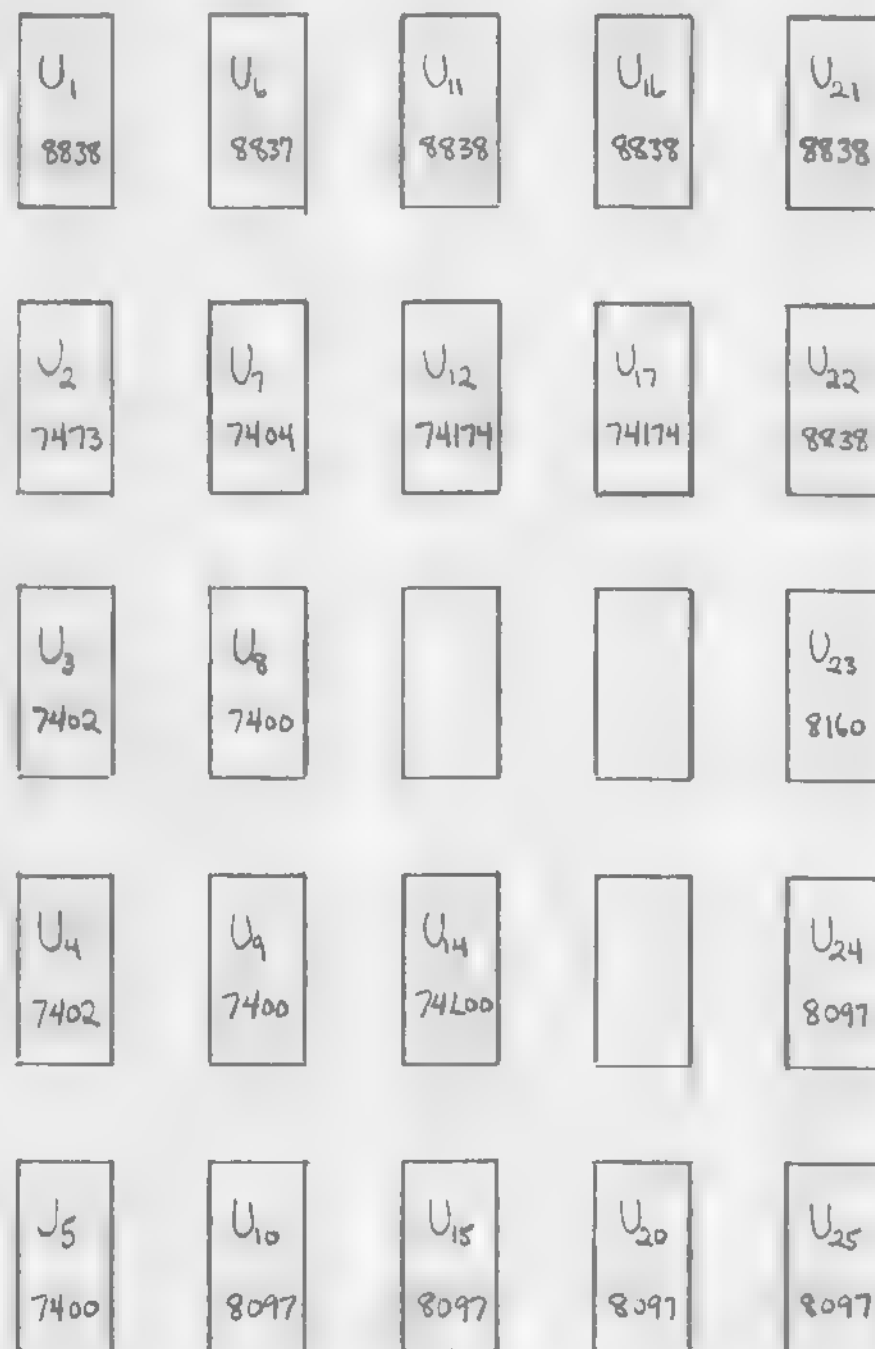
POWER CONSUMPTION:

+9VDC @

NUMBER	CHIP	LOCATION	VCC PIN	GND PIN
U ₀	21L02	BCZ	10	9
U ₁	21L02	CY	10	9
U ₂	21L02	CX	10	9
U ₃	21L02	CW	10	9
U ₄	21L02	CV	10	9
U ₅	21L02	CT	10	9
U ₆	21L02	CS	10	9
U ₇	21L02	CR	10	9
U ₈	21L02	BY	10	9
U ₉	21L02	BX	10	9
U ₁₀	21L02	BW	10	9
U ₁₁	21L02	BV	10	9
U ₁₂	21L02	BT	10	9
U ₁₃	21L02	BS	10	9
U ₁₄	21L02	BR	10	9
U ₁₅	21L02	BP	10	9
U ₁₆	8097	DY	16	8
U ₁₇	8097	DX	16	8
U ₁₈	8097	DW	16	8
U ₁₉	8T97	DV	16	8
U ₂₀	8T97	DT	16	8
U ₂₁	8T97	DS	16	8
U ₂₂	8097	AY	16	8
U ₂₃	8097	AX	16	8
U ₂₄	8097	AW	16	8
U ₂₅	8T97	AV	16	8
U ₂₆	8T97	AT	16	8
U ₂₇	8T97	AS	16	8
U ₂₈	74157	DR	16	8
U ₂₉	74157	DP	16	8
U ₃₀	74157	CP	16	8
U ₃₁	8160	CN	16	8
U ₃₂	7430	BN	14	7
U ₃₃	8097	AR	16	8
U ₃₄	8097	AP	16	8
U ₃₅	74161	AN	16	8
U ₃₆	74161	CM	16	8
U ₃₇	74161	BM	16	8
U ₃₈	74161	AM	16	8
U ₃₉	74154	DNM	24	12
U ₄₀	7400	DL	14	7
U ₄₁	7400	CL	14	7
U ₄₂	7400	BL	14	7
U ₄₃	7400	AL	14	7
U ₄₄	7404	DK	14	7
U ₄₅	7402	CK	14	7
U ₄₆	7402	BK	14	7
U ₄₇	7404	AK	14	7
U ₄₈	7474	BLT	14	7

BERG H-854			
WIRING VIEW			
SIGNAL	PIN	SIGNAL	PIN
GND	B	A	GND
D ₁₅	D	C	D ₁₄
D ₁₃	F	E	D ₁₂
D ₁₁	J	H	D ₁₀
D ₉	L	K	D ₈
D ₇	N	M	D ₆
D ₅	R	P	D ₄
D ₃	T	S	D ₂
D ₁	V	U	D ₀
GND	X	W	GND
A ₁₅	Z	Y	A ₁₄
A ₁₃	BB	AA	A ₁₂
A ₁₁	DD	CC	A ₁₀
A ₉	FF	EE	A ₈
A ₇	JJ	HH	A ₆
A ₅	LL	KK	A ₄
A ₃	NN	MM	A ₂
A ₁	RR	PP	A ₀
READY	SS	TT	INIT
SPARE	UU	VV	SPARE
GND			GND

COMPONENT SIDE



BERG H-854

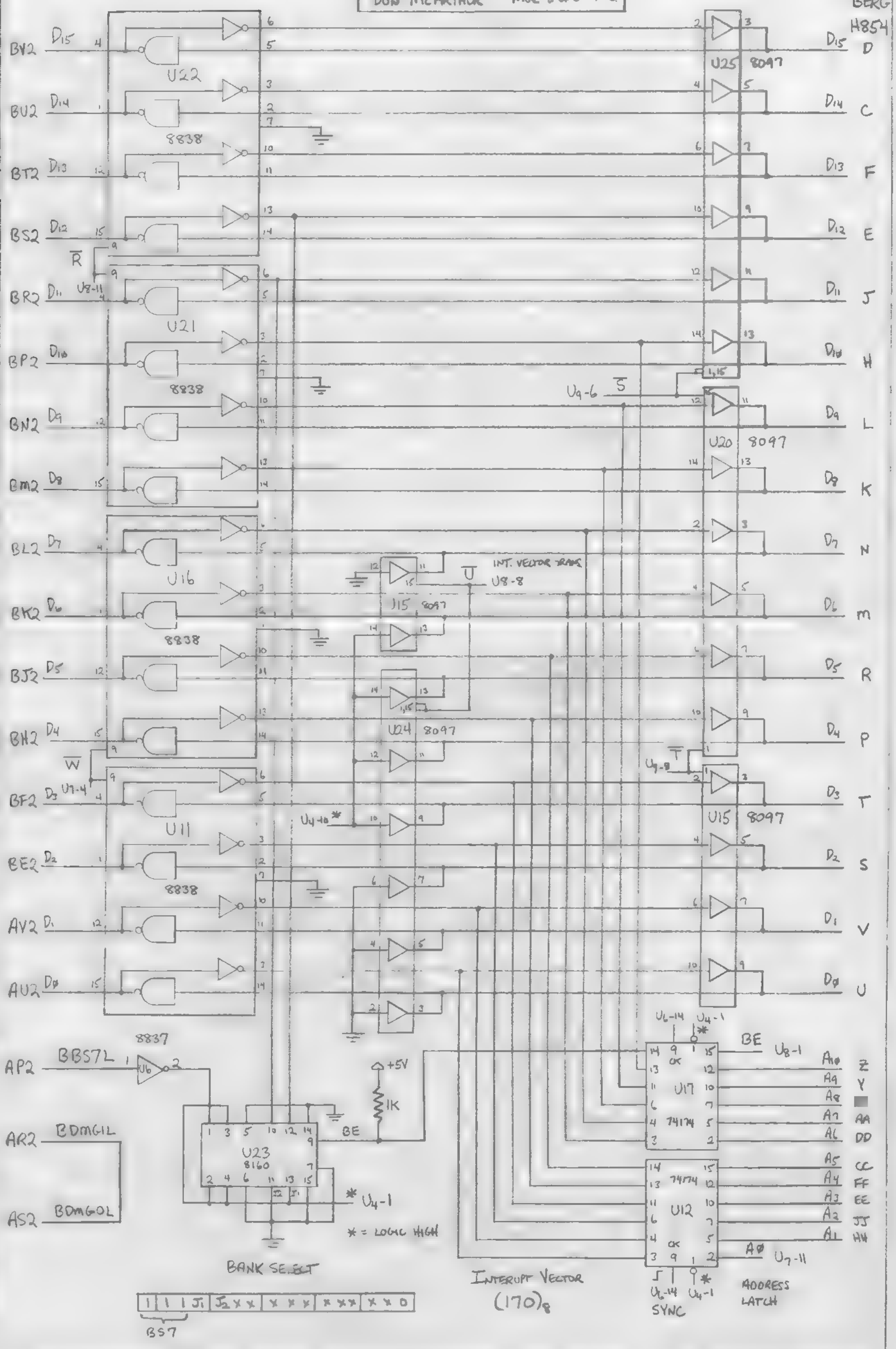
3188 JK 4808 x 1.42 1.400
000000000000000000000000
000000000000000000000000
240 E 1.400 3.000 1.400
3188 JK 4808 x 1.42 1.400

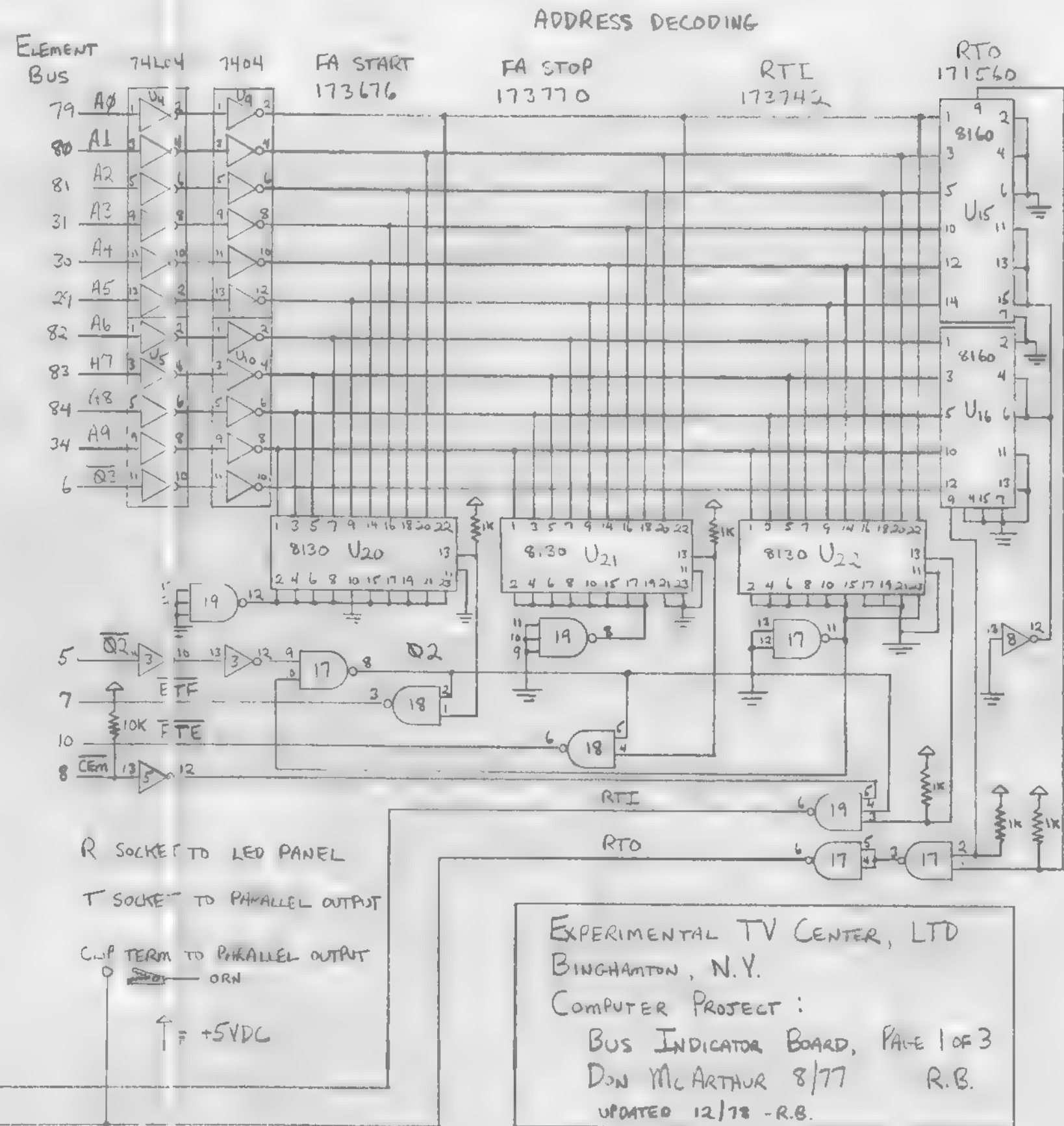
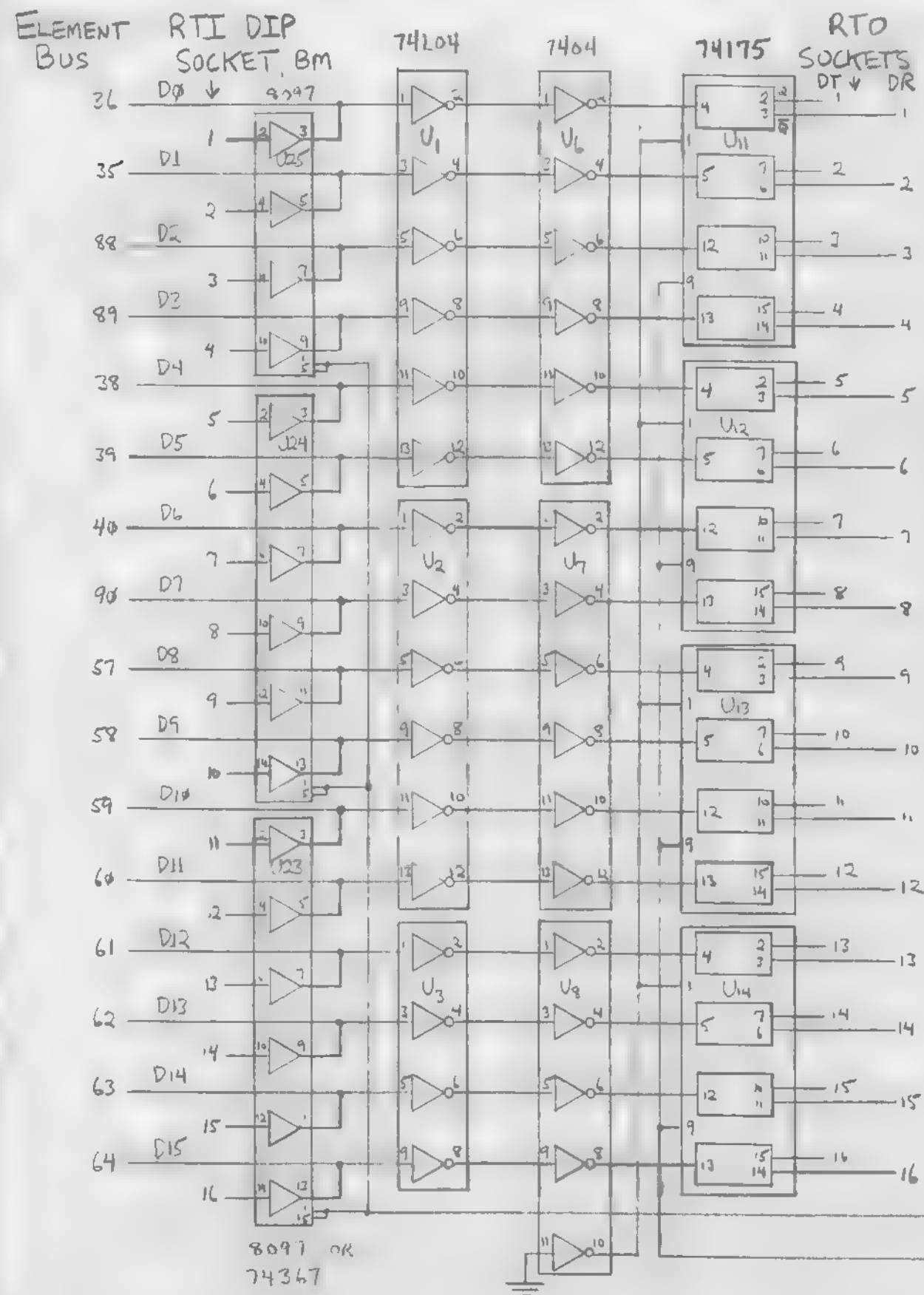
PARTS LIST:

QUANTITY	DESCRIPTION	VCC PIN	GND PIN
4	SN7400N QUAD 2-INPUT NAND	14	7
2	SN7402N QUAD 2-INPUT NOR	14	7
1	SN7404N HEX INVERTER	14	7
1	SN7473N DUAL JK MASTER/SLAVE FLIP FLOP	4	11
2	SN74174N HEX D FLIP FLOP WITH CLEAR	16	8
5	DM8097N TRI-STATE HEX BUFFER	16	8
1	DM8160N 6-BIT COMPARATOR	16	8
1	DM8837N HEX UNIFIED BUS RECEIVER	16	8
5	DM8838N QUAD UNIFIED BUS TRANSCEIVER	16	8
1	DIGITAL W943 PROTOBOARD		
1	BERG H854 CONNECTOR		
1	1N270 GERMANIUM DIODE		
200 Ω	1/4 WATT RESISTOR		
470 Ω	" "		
1K	" "		
22K	" "		
.01 μ F	DISK CAPACITOR		
.0027 μ F	" "		

EXPERIMENTAL TV CENTER, LTD.
BINGHAMTON, N.Y.
COMPUTER PROJECT
PARALLEL INTERFACE
DON McARTHUR 1/77
PAGE 1 OF 3 R.B.

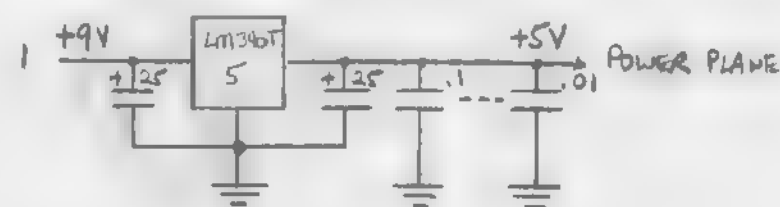
BERG
H854
D





PARTS LIST

1	VECTOR 8800V UNIVERSAL 100-PIN PLUG-BOARD
12	16-PIN DIP WIRE WRAP SOCKETS
13	14-PIN DIP " " "
3	24-PIN DIP " " "
1	HEAT SINK FOR REGULATOR
1	LM340T-5 REGULATOR
1	2N3904 NPN TRANSISTOR
1	SN7400N QUAD 2-INPUT NAND
1	SN7403N QUAD 2-INPUT NAND, OPEN COLLECTOR
1	SN7410N TRIPLE 3-INPUT NAND
5	SN7404N HEX INVERTER
5	SN74104N HEX INVERTER
4	SN74175N QUAD D FLIP FLOP
3	DM8097N TRI-STATE HEX BUFFER
3	DM8130N 10-BIT COMPARATOR
2	DM8160N 6-BIT COMPARATOR
3	22 μ F 25V ELECTROLYTIC CAPACITOR
3	.1 μ F 35V TANTALUM CAPACITOR
10	.01 μ F 100V MYLAR CAPACITOR
6	1K 1/4 WATT RESISTOR
1	2K 1/4 WATT RESISTOR
1	20K 1/4 WATT RESISTOR



NUMBER	CHIP	LOCATION	VCC PIN	GND PIN
U ₁	74L04	AV	14	7
U ₂	74L04	AT	14	7
U ₃	74L04	AS	14	7
U ₄	74L04	AR	14	7
U ₅	74L04	AP	14	7
U ₆	7404	BV	14	7
U ₇	7404	BT	14	7
U ₈	7404	BS	14	7
U ₉	7404	BR	14	7
U ₁₀	7404	BP	14	7
U ₁₁	74175	CW	16	8
U ₁₂	74175	CV	16	8
U ₁₃	74175	CT	16	8
U ₁₄	74175	CS	16	8
U ₁₅	8160	CR	16	8
U ₁₆	8160	CP	16	8
U ₁₇	7400	CN	14	7
U ₁₈	7403	CM	14	7
U ₁₉	7410	CL	14	7
U ₂₀	8130	DPN	24	12
U ₂₁	8130	DNM	24	12
U ₂₂	8130	DML	24	12
U ₂₃	8097	AN	16	8
U ₂₄	8097	AM	16	8
U ₂₅	8097	AL	16	8

BUFFER MEMORY ADDRESS MAP

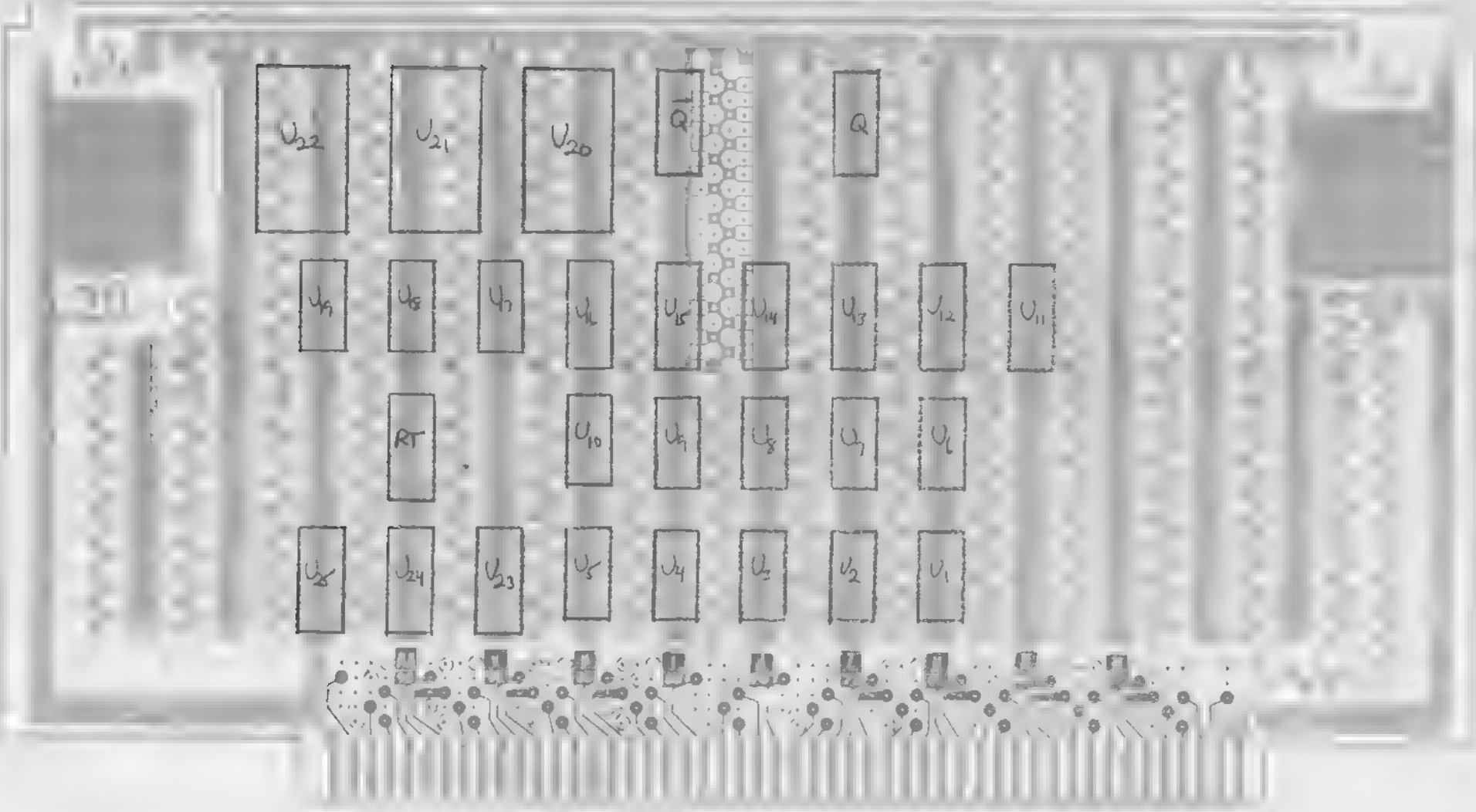
170000	
170040	
170076	16 D/A'S
171560	BUS INDICATOR (U ₁₅ , U ₁₆)
173676	
173742	FEATURE AREA
173770	F.A. START (U ₂₀) REAL TIME INPUT (U ₂₂) F.A. STOP (U ₂₁)
173776	STATUS REGISTER

THE FOUR CIRCUITS ON THE BUS INDICATOR CARD

- ① BUS INDICATOR CIRCUIT
- ② BUFFER MEMORY MODE CONTROLLER
- ③ REAL-TIME INPUT CIRCUIT
- ④ V.D. TO TTL CONVERTER

EXPERIMENTAL TV CENTER, LTD.
BINGHAMTON, N.Y.
COMPUTER PROJECT
BUS INDICATOR BOARD 8/77
DON McARTHUR
PAGE 2 OF 3 R.B.

BUS INDICATOR

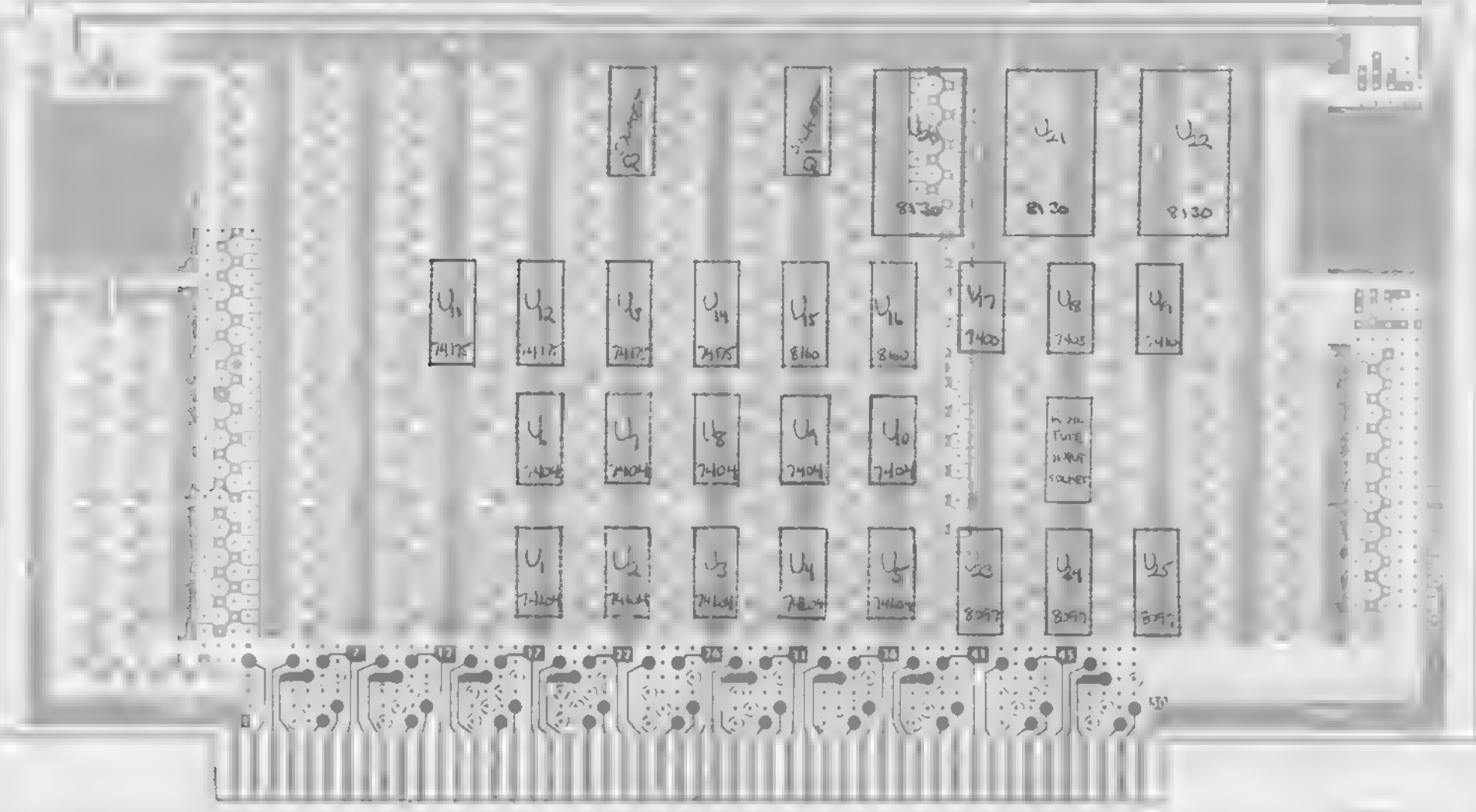


- NOTES
- 5. RECOMMENDED LOCATION FOR T46-4 TERMINALS IN POWER AND GROUND PLANES AT ROWS 23 & 25, AND RIGHT SIDE REGULATOR POSITION
 - 4. ZIG ZAG BUS PADS ON POWER PLANE ARE OFFSET FROM THOSE ON GROUND PLANE
 - 3. DASHED CIRCLES REPRESENT CONNECTOR CONTACT PADS ON OPPOSITE SIDE OF BOARD
 - 2. DIPS WITH 0.3" SPAN MOUNT OVER SOLID BUS COLUMNS
 - 1. ZONE LETTERS A TO D ON LEFT BORDER, AND J TO Z ON TOP BORDER ARE DIP ROW & COLUMN DESIGNATORS

VECTOR D.I.P. PLUGBOARD
PATTERN .042" x 0.1" SPACED HOLES
LA13P2 LAYOUT PAPER



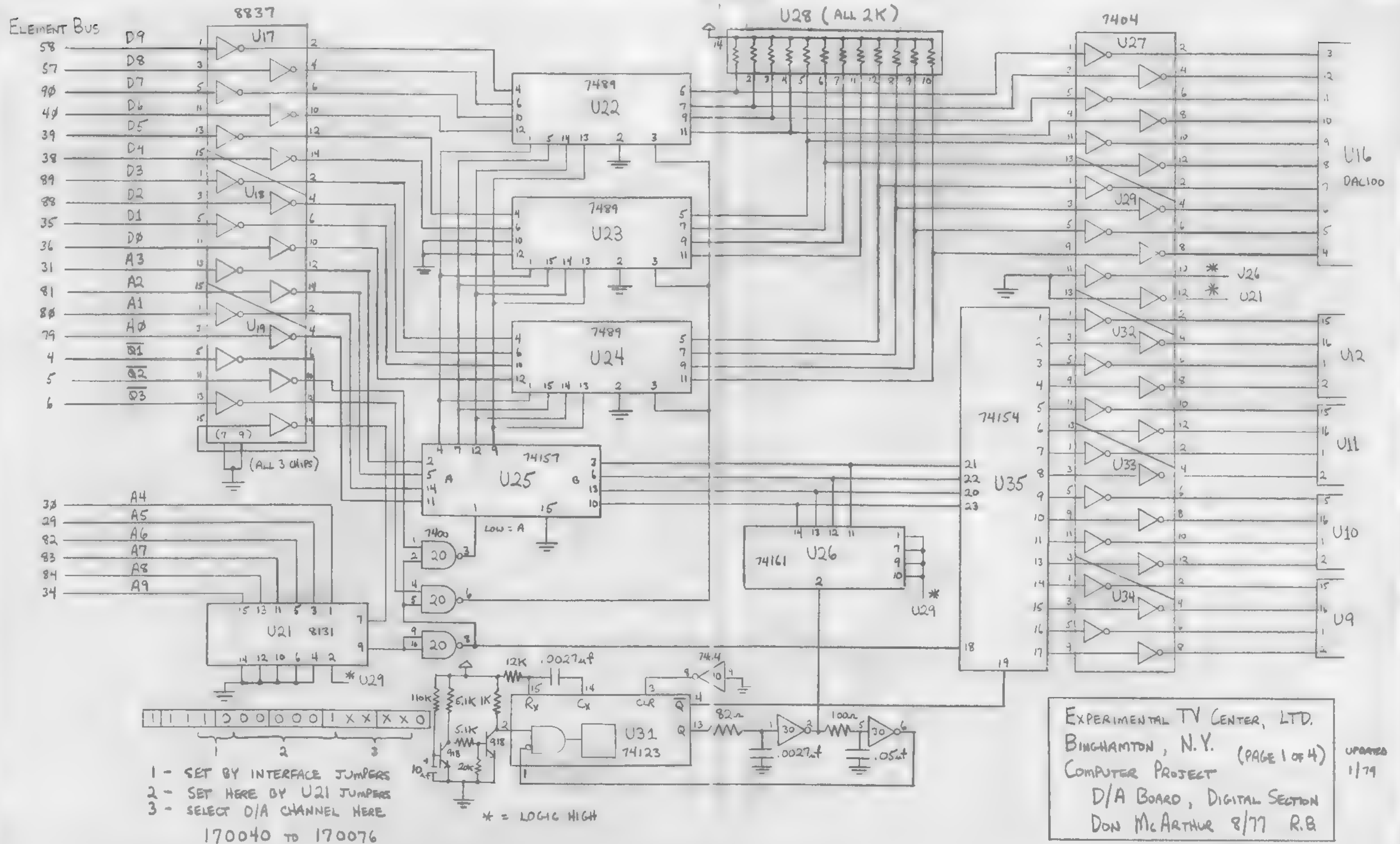
BUS INDICATOR

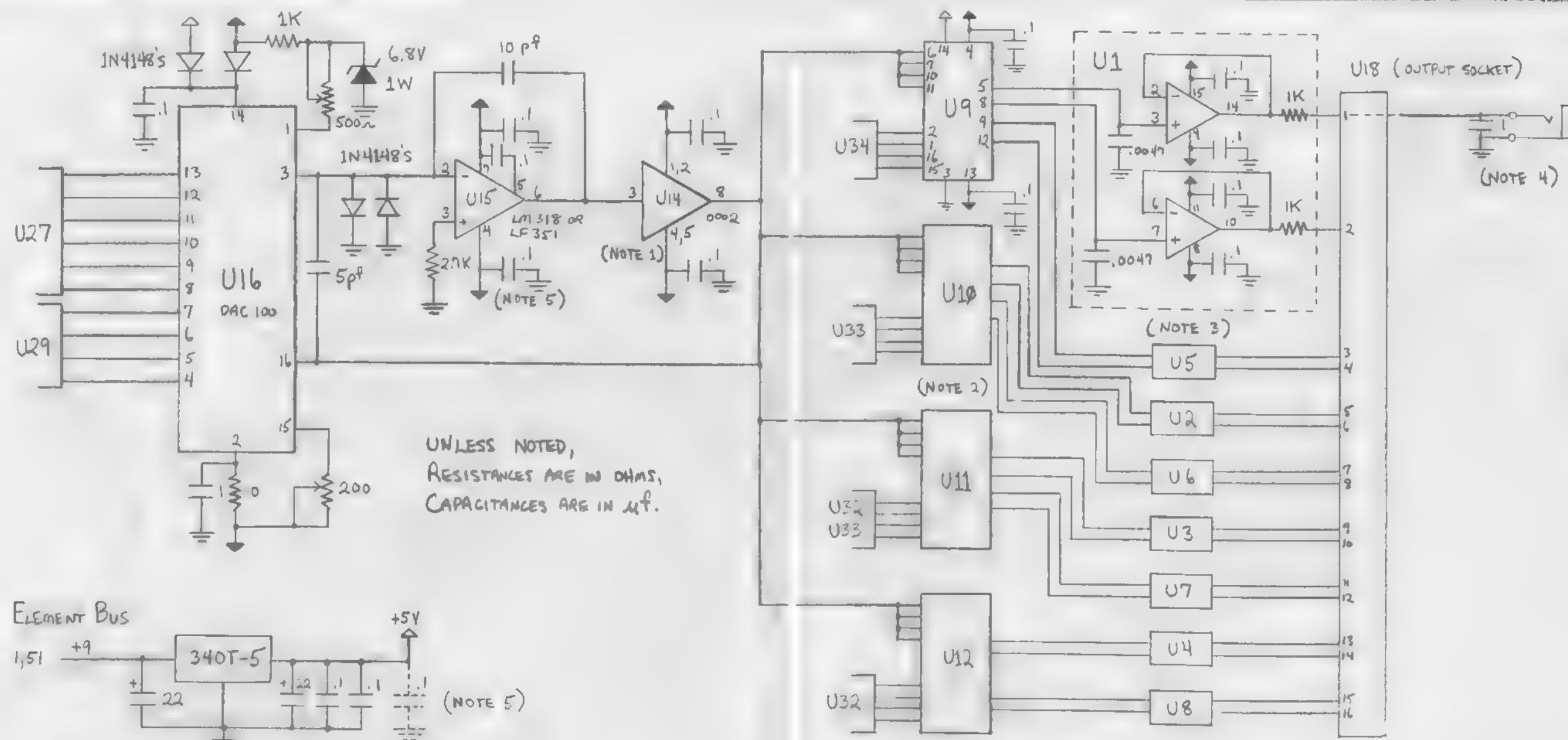


- NOTES
- 5. RECOMMENDED LOCATION FOR T46-4 TERMINALS IN POWER AND GROUND PLANES AT ROWS 23 & 25, AND LEFT SIDE REGULATOR POSITION.
 - 4. ZIG ZAG BUS PADS ON POWER PLANE ARE OFFSET FROM THOSE ON GROUND PLANE
 - 3. DASHED CIRCLES REPRESENT CONNECTOR CONTACT PADS ON OPPOSITE SIDE OF BOARD
 - 2. DIPS WITH 0.3" SPAN MOUNT OVER SOLID BUS COLUMNS
 - 1. ZONE LETTERS A TO D ON LEFT BORDER, AND J TO Z ON TOP BORDER ARE DIP ROW & COLUMN DESIGNATORS

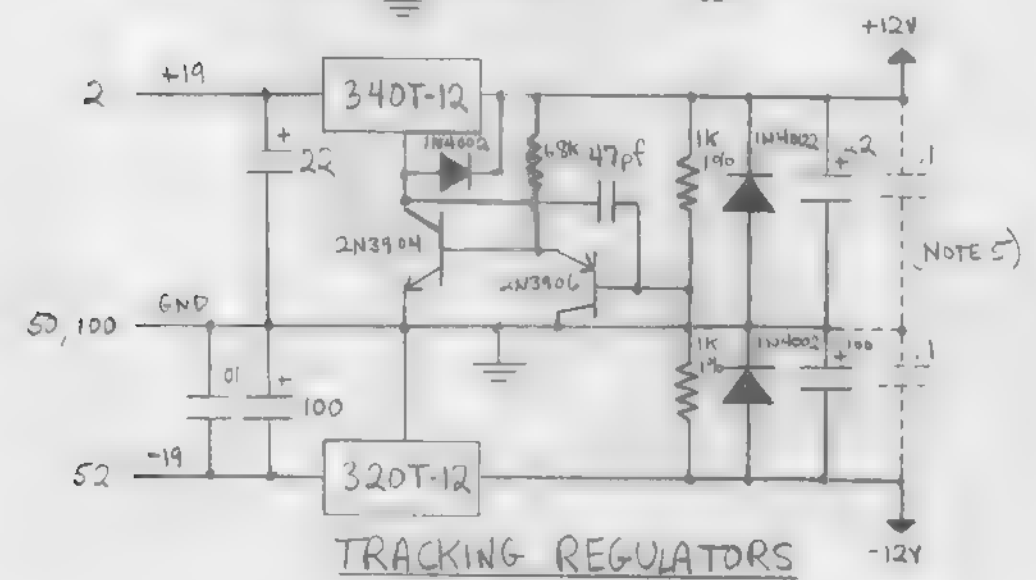
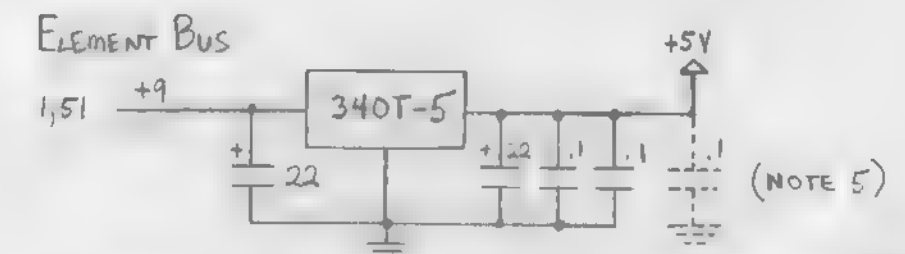


ETC, LTD.
BINGHAMTON, N.Y.
8/77 R.B.
PAGE 3 OF 3





UNLESS NOTED,
RESISTANCES ARE IN OHMS,
CAPACITANCES ARE IN μ F.



TRACKING REGULATORS

NOTE :

- 1) U14 (LH0002CN) IS A 10-PIN DIP.
- 2) U10-U12 ARE CONFIGURED SIMILARLY TO U9, AH0015.
- 3) U2-U8 ARE CONFIGURED SIMILARLY TO U1, WHICH CONSISTS OF 2 LM307N CHIPS IN ONE 16-PIN SOCKET.
- 4) SEE DESCRIPTION OF D/A OUTPUT PANEL.
- 5) .1μF TANTALUM CAPACITORS ARE PLACED CLOSE TO POWER SUPPLY PINS OF ALL ANALOG CHIPS.

EXPERIMENTAL TV CENTER, LTD
BINGHAMTON, N.Y.
COMPUTER PROJECT
D/A BOARD (PAGE 2 OF 4)
ANALOG SECTION
DON McARTHUR 8/77 R.B.

UPDATED 1/79

PARTS LIST

1	VECTOR 8800V UNIVERSAL 100-PIN PLUG-BOARD
26	16-PIN DIP WIRE WRAP SOCKETS
8	14-PIN DIP " " "
1	24-PIN DIP
3	HEAT SINKS
1	LM340T-5 VOLTAGE REGULATOR CHIP
1	LM340T-12 " " "
1	LM320T-12 " " "
1	2N3904 TRANSISTOR (NPN)
1	2N3906 " (PNP)
1	1N4148 DIODES
3	1N4002 DIODES
1	6.8V 1WATT ZENER DIODE
1	SN7400N QUAD 2-INPUT NAND
6	SN7404N HEX INVERTER
3	SN7489N 64-BIT RAM
1	SN74123N MONOSTABLE MULTIVIBRATOR
1	SN74154N 4-LINE TO 16-LINE DEMULTIPLEXER
1	SN74157N QUAD 2:1 DATA SELECTOR
1	SN74161N BINARY COUNTER
1	DM8131N 6-BIT UNIFIED BUS COMPARATOR
3	DM8837N HEX UNIFIED BUS RECEIVER
1	DAC100 10-BIT D/A
1	LM318N HIGH SPEED OP AMP
1	LH0002CN CURRENT AMP
3	AH0015CD QUAD ANALOG SWITCH
16	LM307N OP AMP

CAPACITORS

2	100µf 25V ELECTROLYTIC
4	22µf 25V " "
1	1µf 50V " "
38	.1µf 35V TANTALUM
1	.05µf DISK
1	.01µf MYLAR
16	.0047µf " "
2	.0027µf DISK
1	47pf " "
1	10pf " "
1	5pf " "

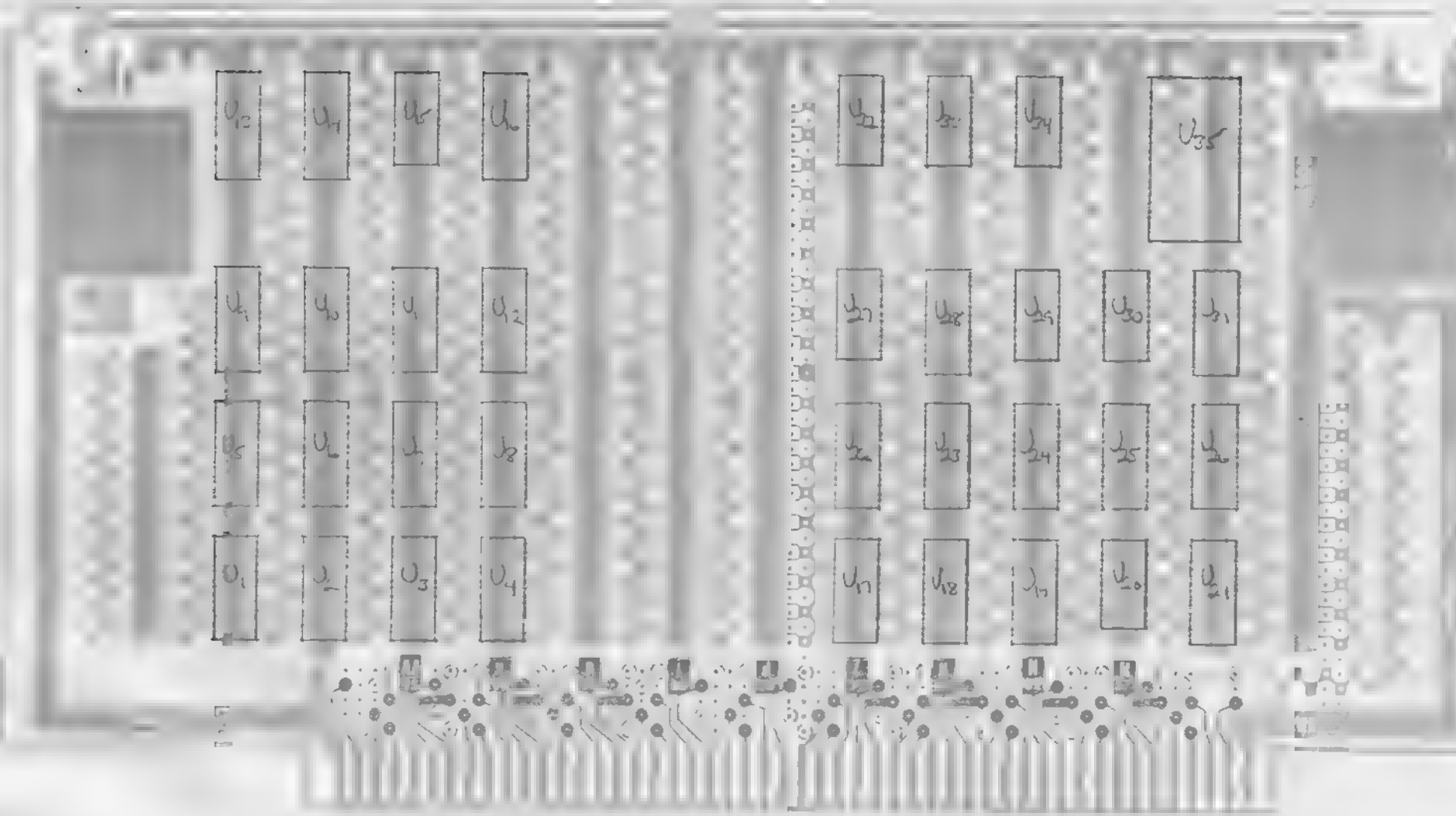
RESISTORS

2	1K 1/2 WATT 1%
1	12K 1/4 WATT 5%
1	10K " "
1	6.8K " "
1	2.7K " "
1	1K " "
1	100Ω " "
1	82Ω " "
1	10Ω " "
1	500Ω TRIMPOT
1	200Ω " "

NUMBER	CHIP	LOCATION	+12 PIN	-12 PIN	+5 PIN	GND PIN
U1	2-307	AK	11, 15	4, 8		
U2	2-307	AL	11, 15	4, 8		
U3	2-307	AM	11, 15	4, 8		
U4	2-307	AN	11, 15	4, 8		
U5	2-307	BK	11, 15	4, 8		
U6	2-307	BL	11, 15	4, 8		
U7	2-307	BM	11, 15	4, 8		
U8	2-307	BN	11, 15	4, 8		
U9	AH0015	CK	4	13	14	3
U10	AH0015	CL	4	13	14	3
U11	AH0015	CM	4	13	14	3
U12	AH0015	CN	4	13	14	3
U13	OUT SOCKET	DK				
U14	LM0002	DL	1, 2	4, 5		
U15	LM318	DM	7	4		
U16	DMC100	DN	14	2		
U17	8837	AT			16	8
U18	8837	AV			16	8
U19	8837	AW			16	8
U20	7400	AX			14	7
U21	4131	AY			16	8
U22	7489	BT			16	8
U23	7489	BV			16	8
U24	7489	BW			16	8
U25	74157	BX			16	8
U26	74161	BY			16	8
U27	7404	CT			14	7
U28	PULL-UPS	CV			16	
U29	7404	CW			14	7
U30	7404	CX			14	7
U31	74123	CY			16	8
U32	7404	DT			14	7
U33	7404	DV			14	7
U34	7404	DW			14	7
U35	74154	DX			24	12

EXPERIMENTAL TV CENTER, LTD., BINGHAMTON, N.Y.
 COMPUTER PROJECT : D/A BOARD (PAGE 3 OF 4)
 DON MCARTHUR 8/77 R.B.

D/A

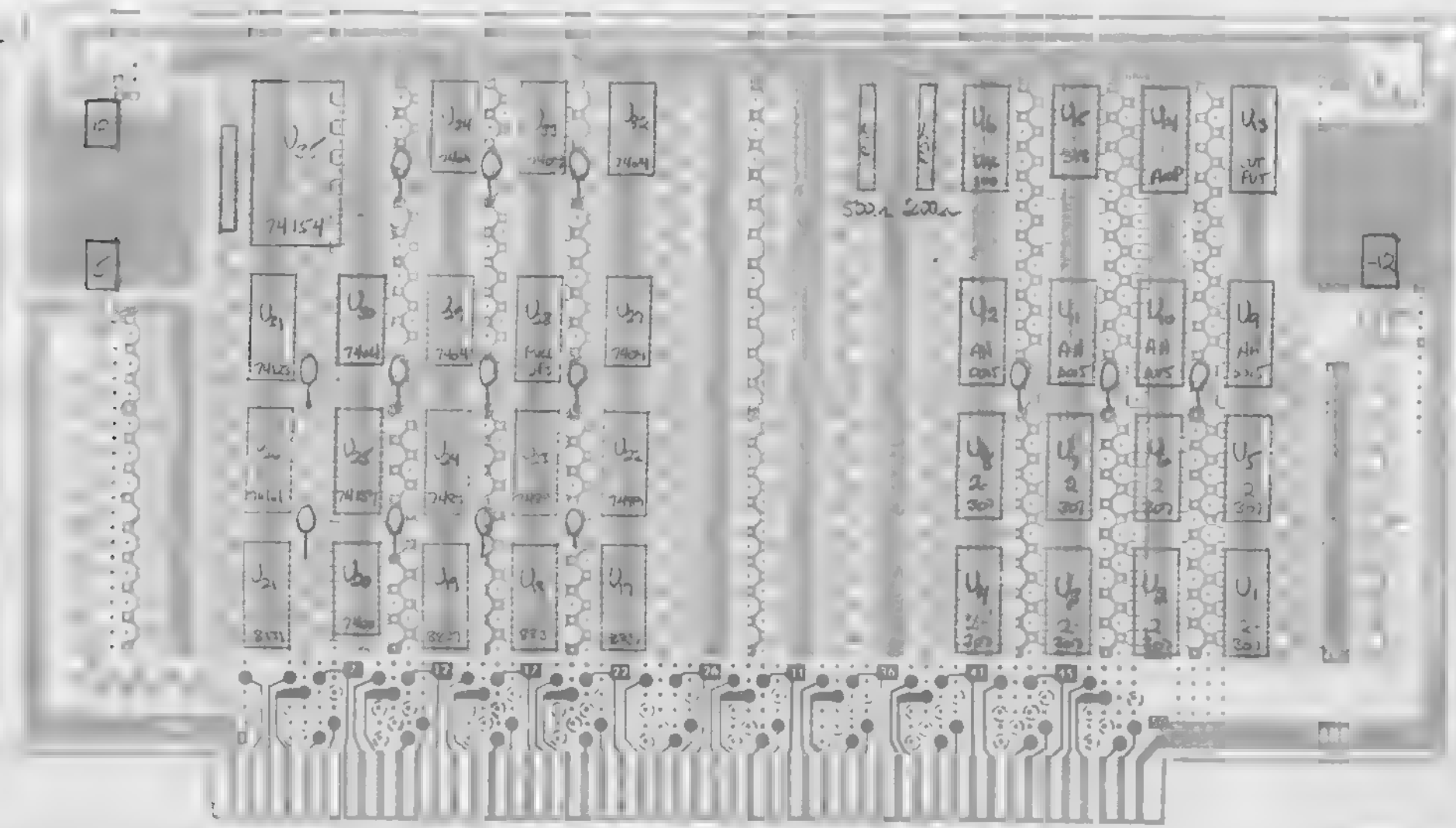


- NOTES:
- 1. RECOMMENDED LOCATION FOR T464 TERMINALS IN POWER AND GROUND PLANES AT ROWS 23 & 25, AND LEFT SIDE REGULATOR POSITION.
 - 2. ZIG-ZAG BUS PATTERN IN POWER PLANE ARE OFFSET FROM THOSE IN GROUND PLANE
 - 3. DASHED CIRCLES REPRESENT CONNECTION POINTS ON APPROPRIATE SIDE OF BOARD
 - 4. DIMS WITH 0.3" SPACING MOUNT OVER THE BUS
 - 5. LETTER DESIGNATORS IN BOARD ARE TYPED ON OPPOSITE SIDE OF BOARD

VECTOR D.I.P. PLUGBOARD
PATTERN .042" x 0.1" SPACED HOLES
LA13P2 LAYOUT PAPER

VECTOR ELECTRONIC CO., INC.
12460 GLADSTONE AVE
SYLMAR, CALIFORNIA 91312

D/A



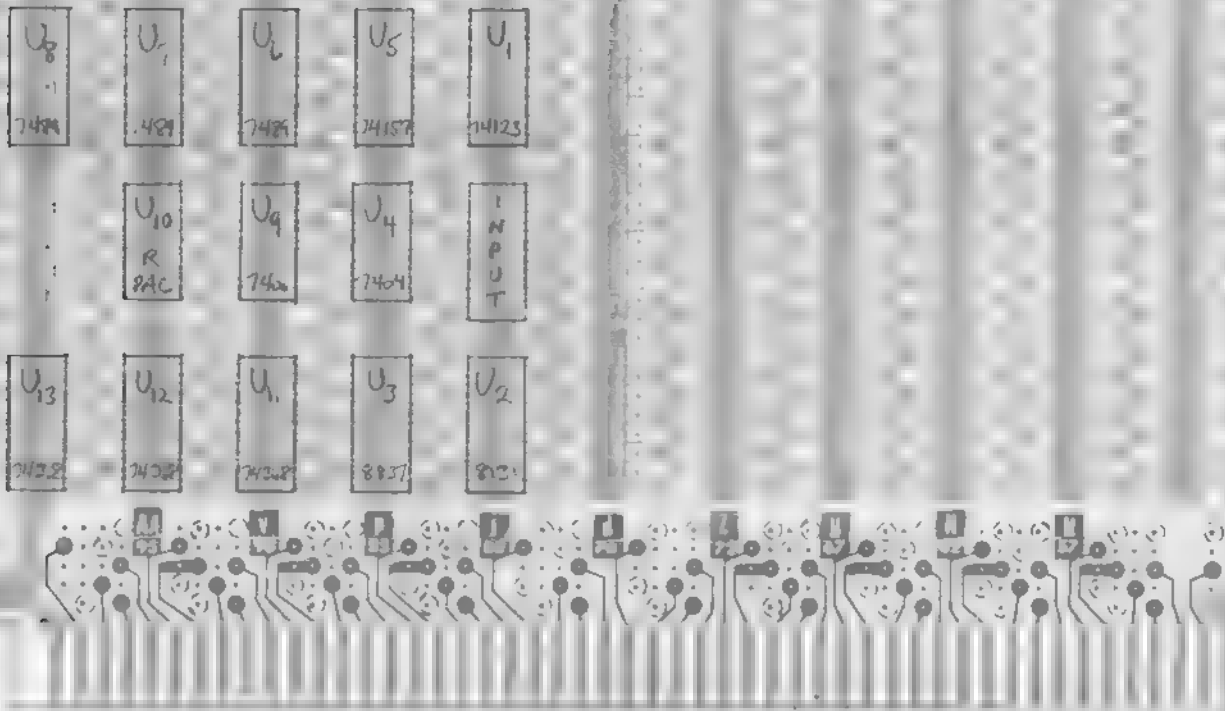
- NOTES:
- 5. RECOMMENDED LOCATION FOR T464 TERMINALS IN POWER AND GROUND PLANES AT ROWS 23 & 25, AND LEFT SIDE REGULATOR POSITION.
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ETC., LTD.
BINGHAMTON, NY
8/77 R.B.
PAGE 4 OF 4

VECTOR D.I.P. PLUGBOARD
PATTERN .042" x 0.1" SPACED HOLES
LA13P1 LAYOUT PAPER

VECTOR ELECTRONIC CO., INC.
12460 GLADSTONE AVE
SYLMAR, CALIFORNIA 91342

A/D

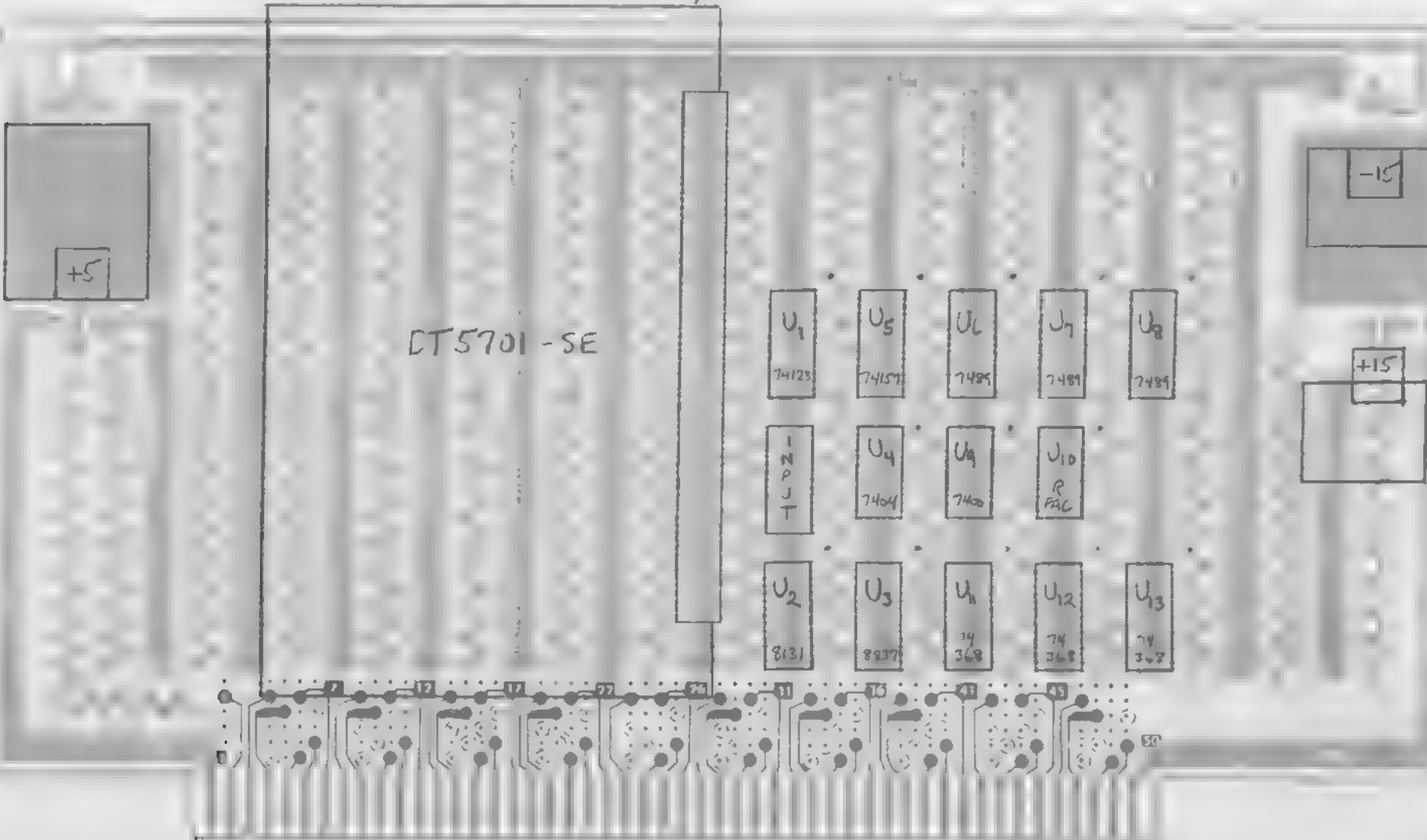


- NOTES
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 2. DIPS WITH 0.3" SPAN MOUNT OVER SOLID BUS COLUMNS
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VECTOR D.I.P. PLUGBOARD
PATTERN 042" x 0.1" SPACED HOLES
LA13P2 LAYOUT PAPER

A/D

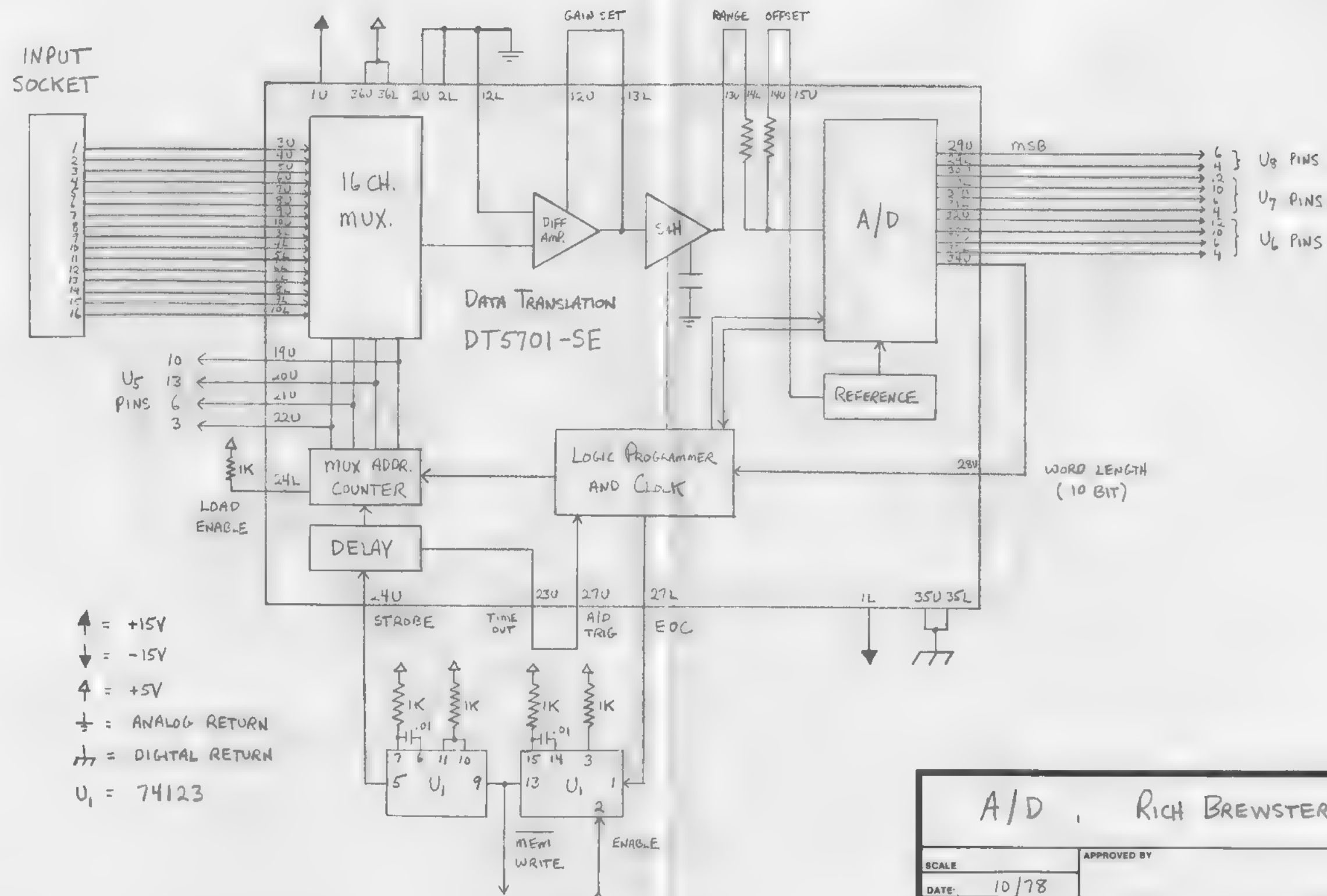


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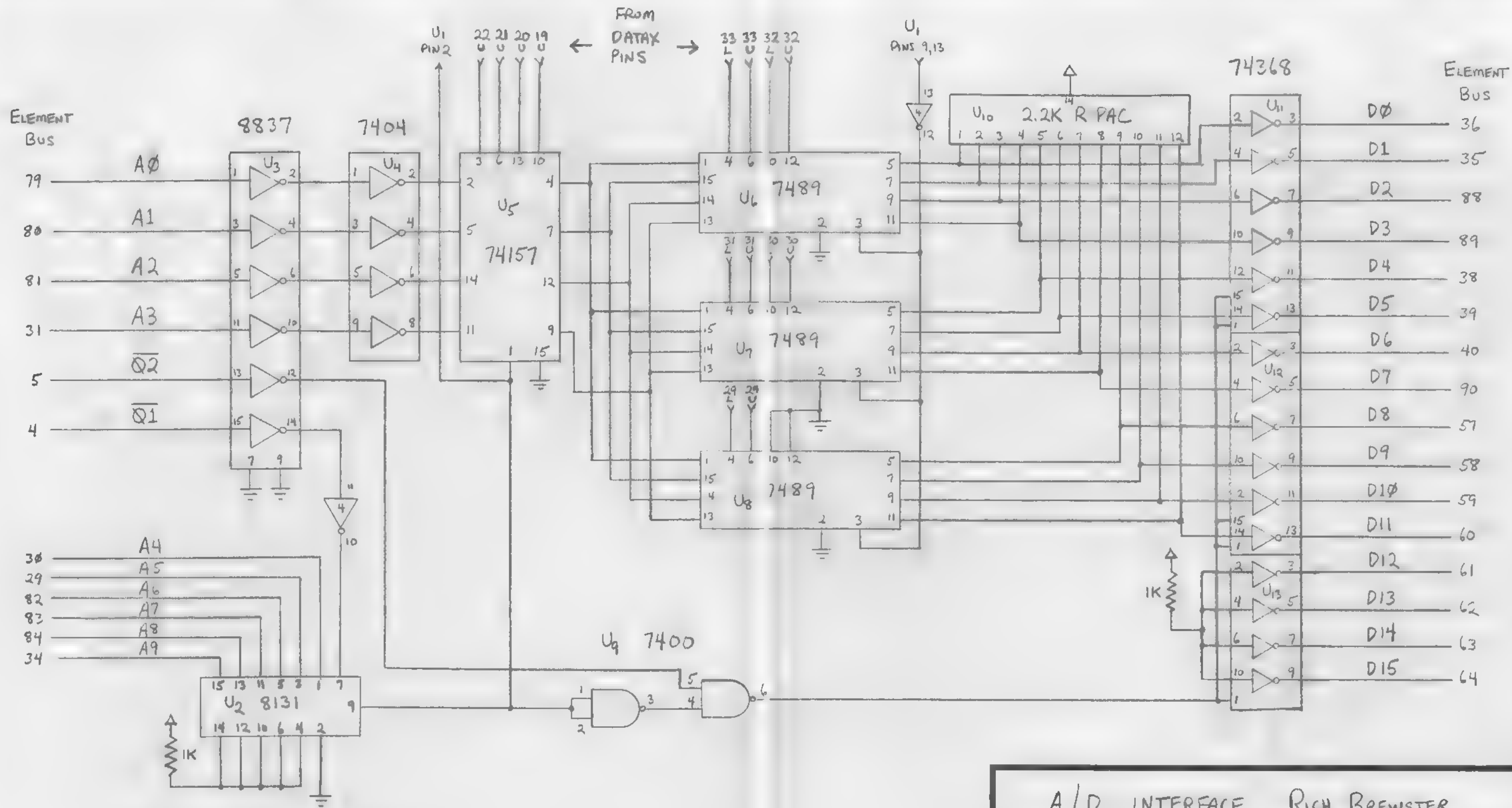
VECTOR D.I.P. PLUGBOARD
PATTERN 042" x 0.1" SPACED HOLES
LA13P1 LAYOUT PAPER

VECTOR ELECTRONIC CO., INC
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A/D, RICH BREWSTER

SCALE	APPROVED BY	DRAWN BY R.B.
DATE 10/78		REVISED
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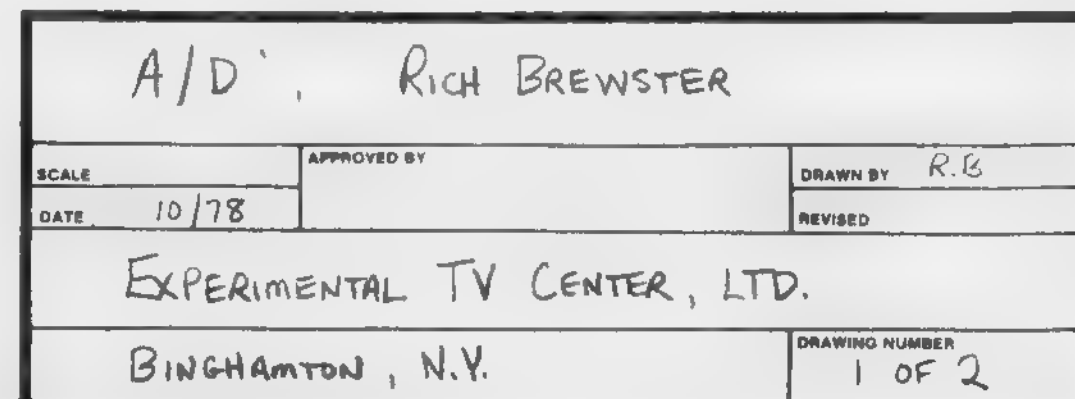


1 1 1 1 0 1 1 1 1 0 X X X X 0

A/D ADDRESSES
173700 TO
173736

A/D, INTERFACE, RICH BREWSTER

SCALE	APPROVED BY	DRAWN BY R.B.
DATE 10/78		REVISED
EXPERIMENTAL TV CENTER, LTD.		
BINGHAMTON, N.Y.		DRAWING NUMBER 2 OF 2

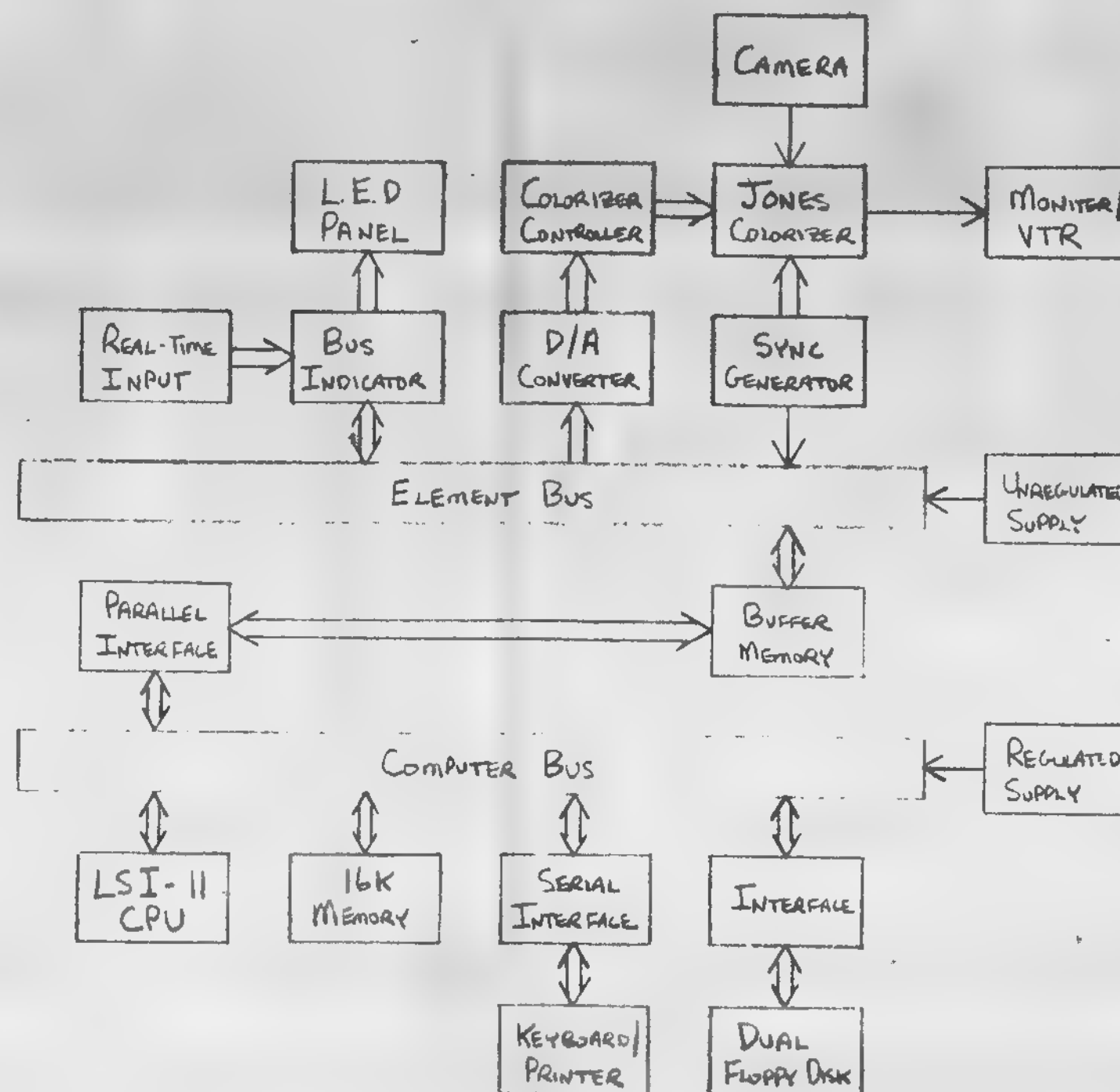


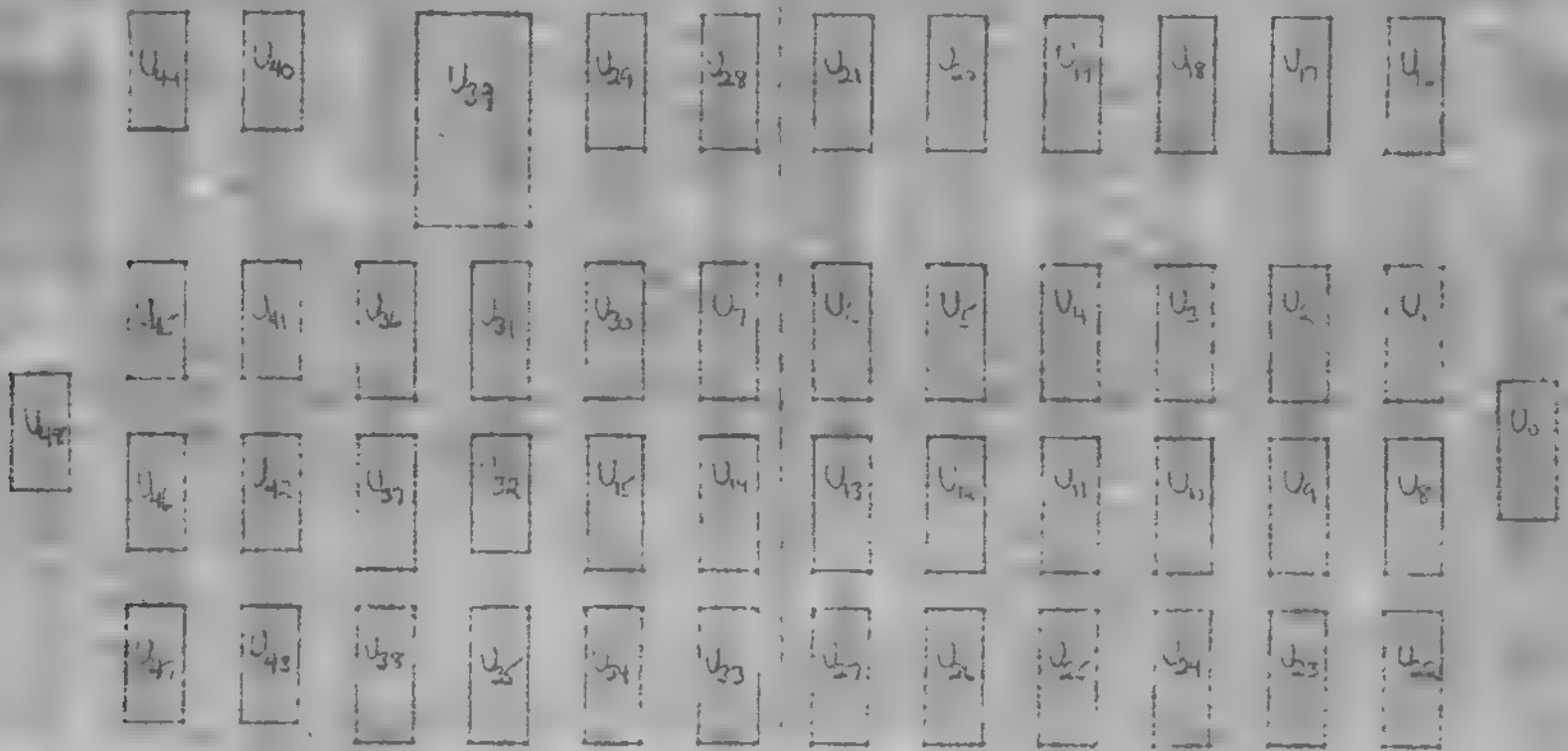


173700 TO
173736

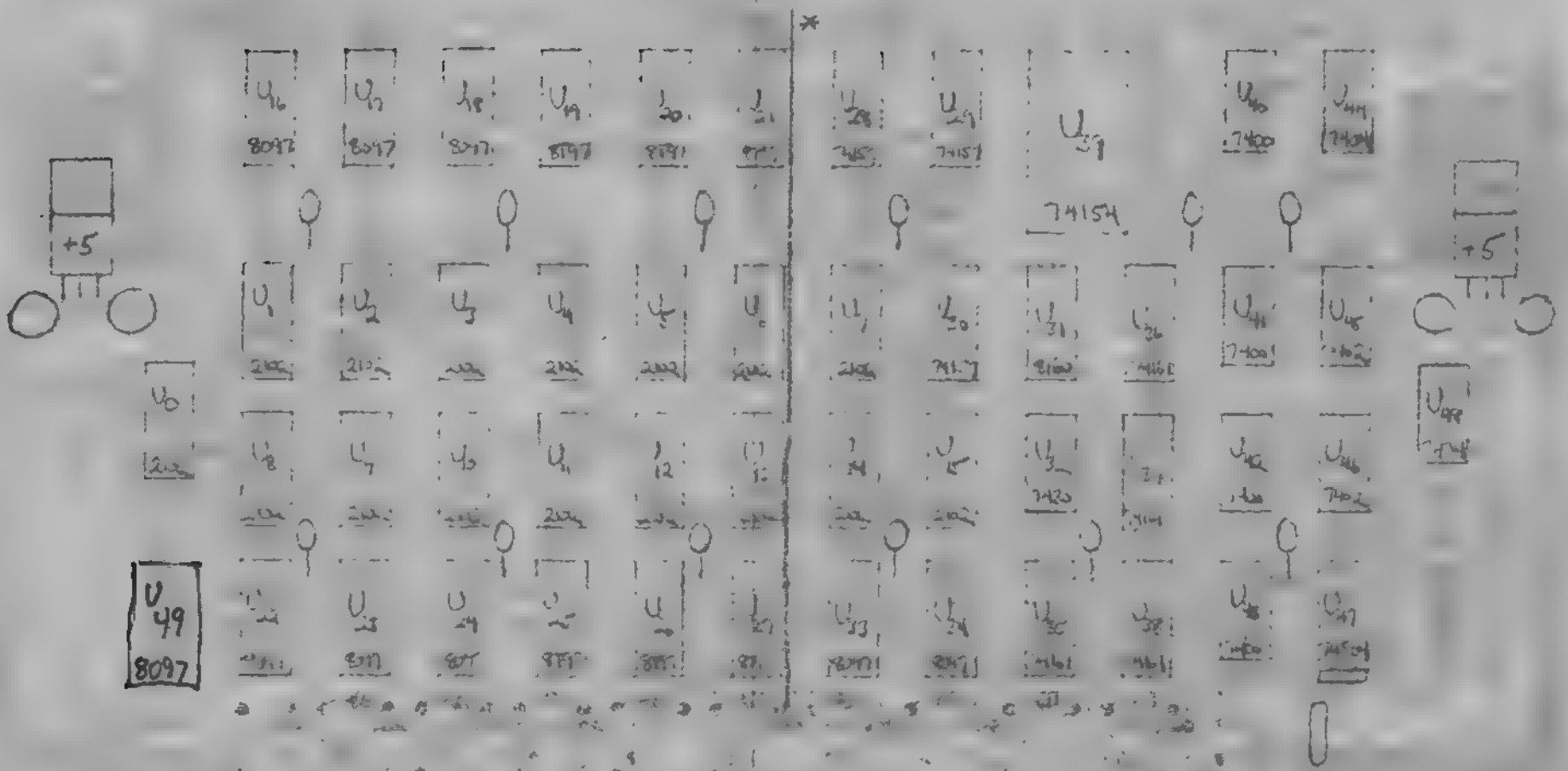
SCALE:	APPROVED BY	DRAWN BY	R.B.
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EXPERIMENTAL TV CENTER, LTD.			
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EXPERIMENTAL TV CENTER, LTD.
 BINGHAMTON, N.Y.
 COMPUTER - BASED
 PROCESSING VIDEO SYNTHESIZER
 SYSTEM DIAGRAM, 9/77 R.B.





BUFFER MEMORY



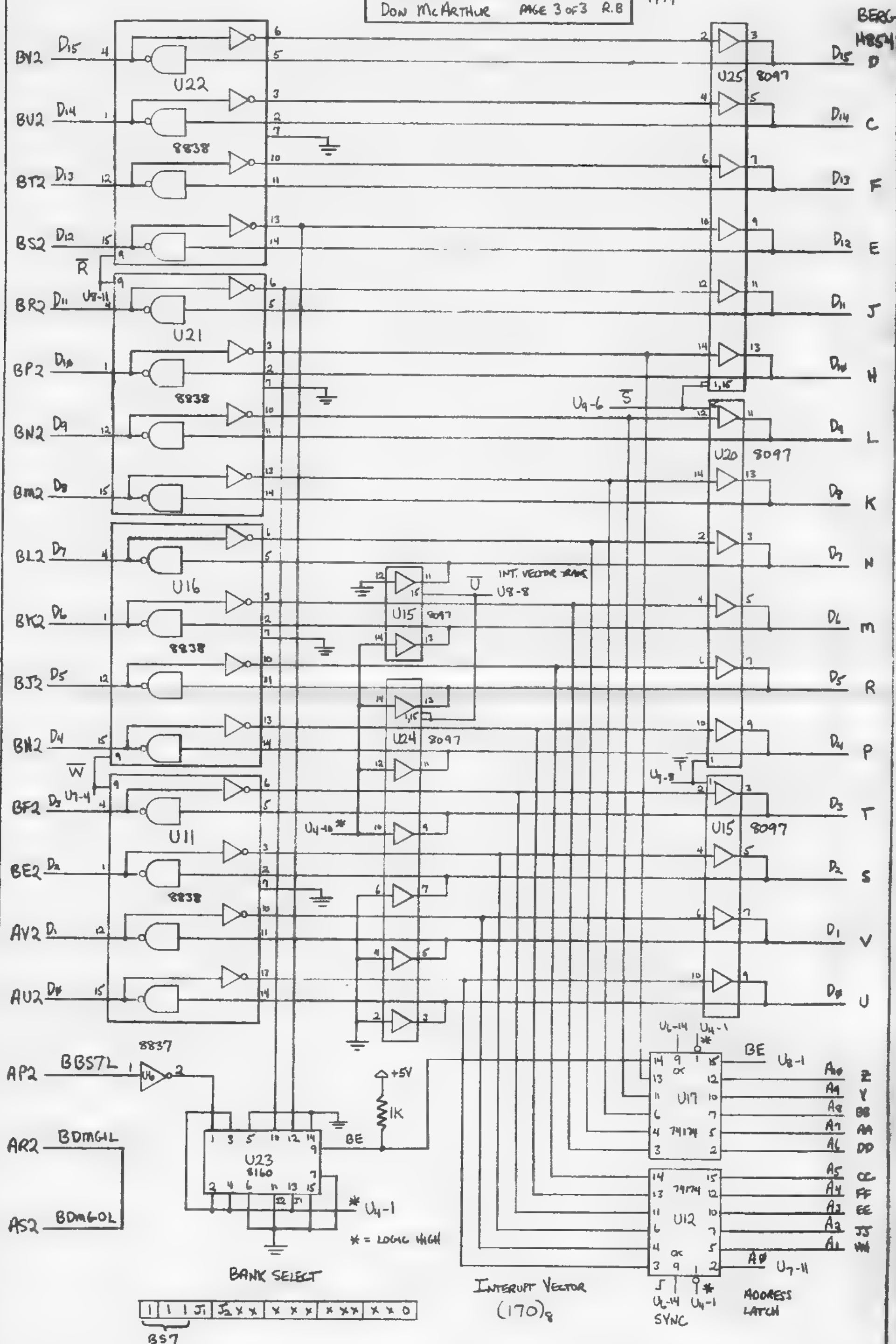
ETC, LTD
 51N HAVEN, NY
 9/77 R.B
 PAGE 3 OF 3

5. RECOMMENDED LOCATION FOR THE 47 MINA 5V IN POWER AND GROUND PLACES AT ROWS 23 & 25, AND A LEFT SIDE

LINE 1 OF BUFFER INITIAL SE ON GROUND

* POWER PLANE CUT TO SEPARATE CURRENTS FROM TWO 5V REGULATORS

UPDATED
1/79



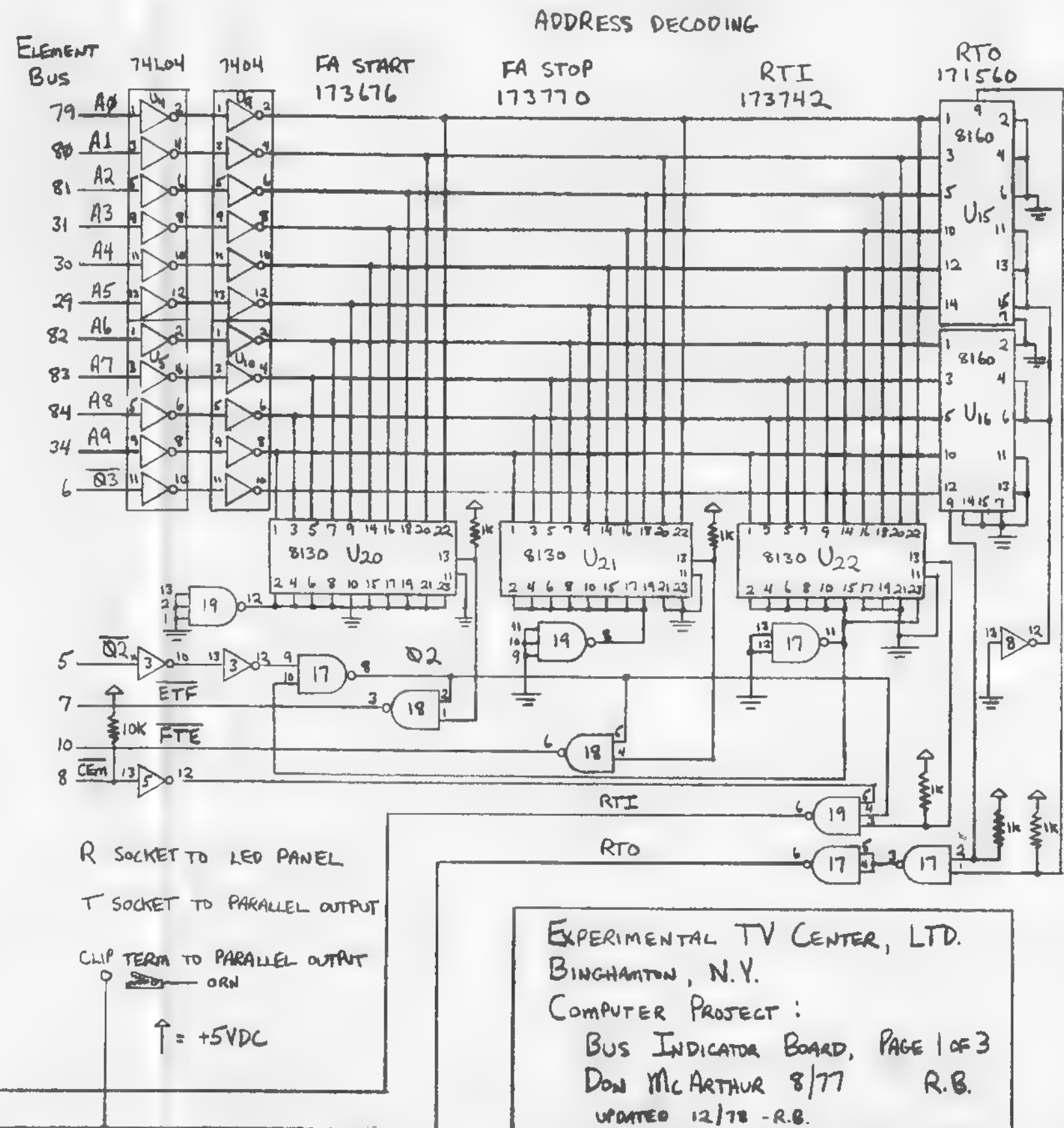
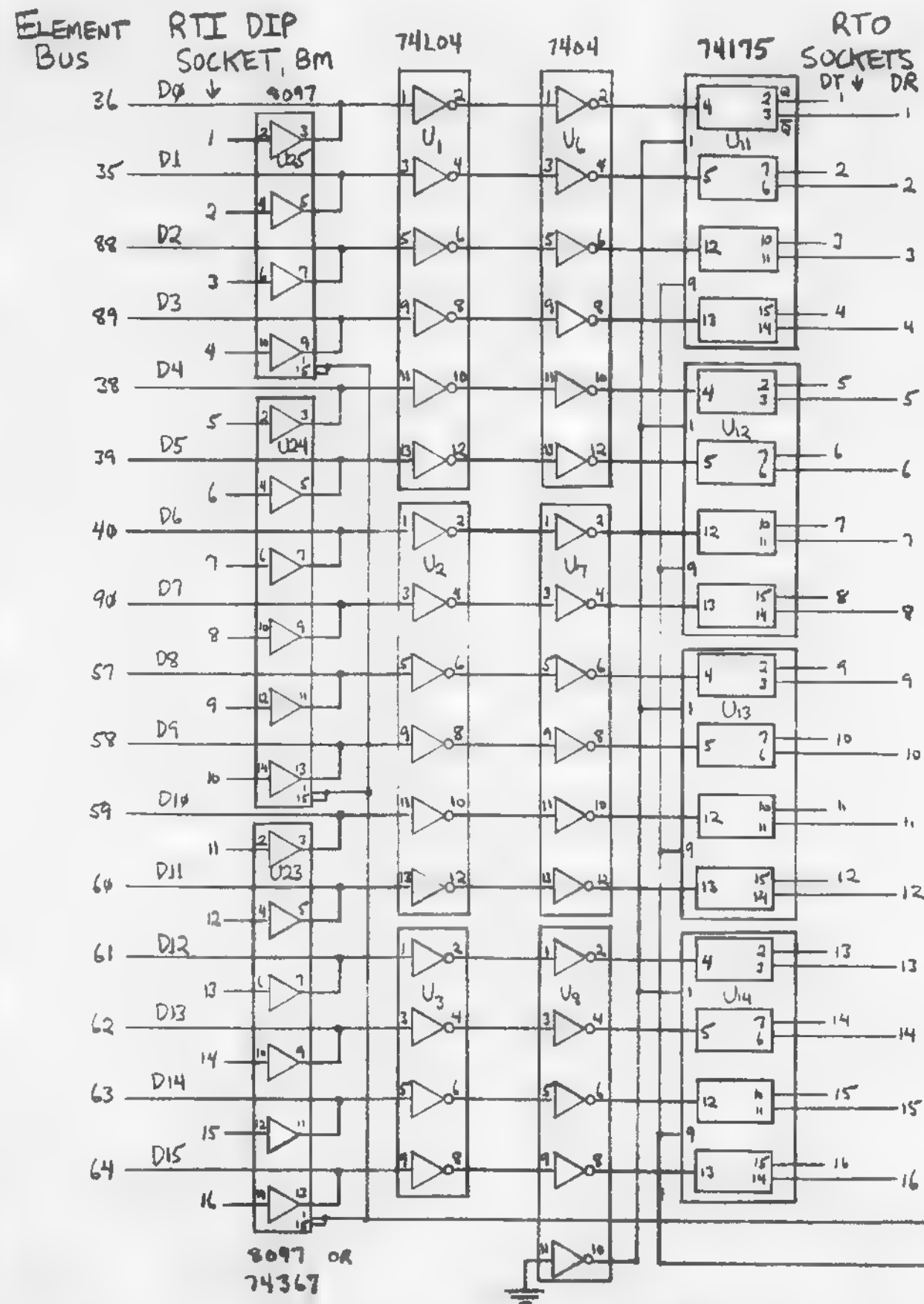
COMPONENT SIDE

U ₁ 8838	U ₆ 8837	U ₁₁ 8838	U ₁₆ 8838	U ₂₁ 8838
U ₂ 7473	U ₇ 7404	U ₁₂ 74174	U ₁₇ 74174	U ₂₂ 8838
U ₃ 7402	U ₈ 7400			U ₂₃ 8100
U ₄ 7402	U ₉ 7400	U ₁₄ 7400		U ₂₄ 8097
U ₅ 7400	U ₁₀ 8097	U ₁₅ 8097	U ₂₀ 8097	U ₂₅ 8097

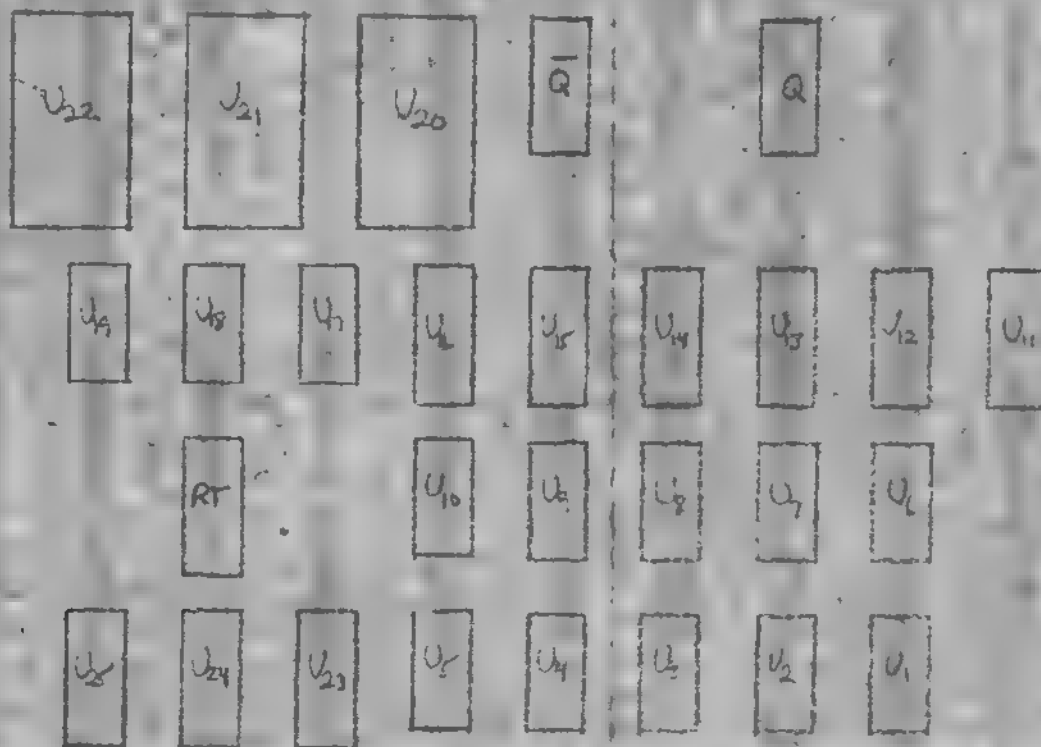
PARTS LIST:

QTY	DESCRIPTION	VOL	QTY PIN
4	N 4001	14	7
2	N 4002	14	7
1	N 4003	14	7
2	N 4004	4	11
5	N 4005	16	x
1	DM8160N	16	.
1	DM8837N	16	.
1	DM8838N	16	.
1	DIGITAL W943 PROTOBOARD		
1	RESISTOR		
1	IN270 GERMANIUM DIODE		
4	"		
1	"		
1	"		
1	1uf DISK CAPACITOR		
1	100-7uf		

DON McARTHUR
 PAGE 1 OF 3
 R.B.



BUS INDICATOR



REAR OF BUS 24, 25, AND

1. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
2. ZONE LETTERS, TO BE ON

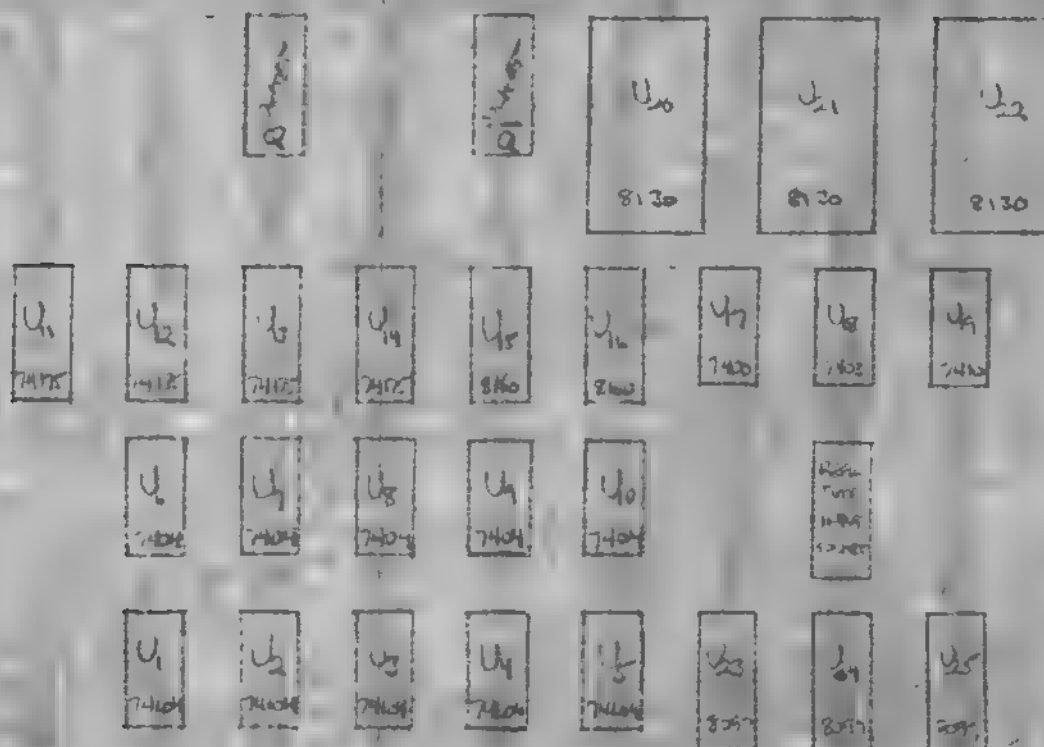
3. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
4. ZONE LETTERS, TO BE ON

5. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
6. ZONE LETTERS, TO BE ON

7. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
8. ZONE LETTERS, TO BE ON

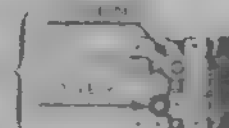
COMPONENT SIDE

BUS INDICATOR

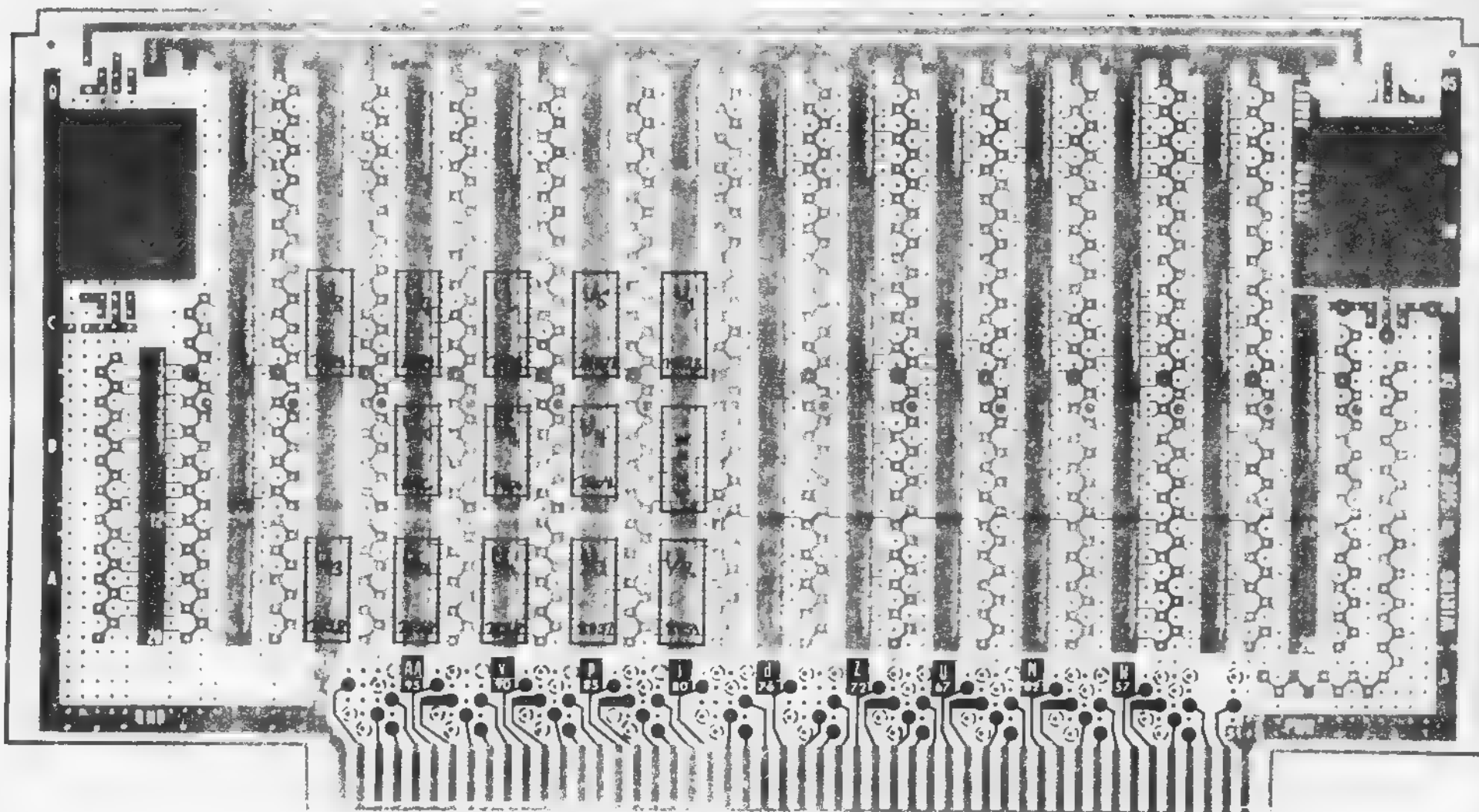


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BINGHAMTON, N.Y.
8/77 R.B.
PAGE 3 OF 3

1. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
2. ZONE LETTERS, TO BE ON
3. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
4. ZONE LETTERS, TO BE ON
5. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
6. ZONE LETTERS, TO BE ON
7. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
8. ZONE LETTERS, TO BE ON
9. DASHED CIRCLES REPRESENT CONNECTOR CIRCLES
10. ZONE LETTERS, TO BE ON



A/D



NOTES

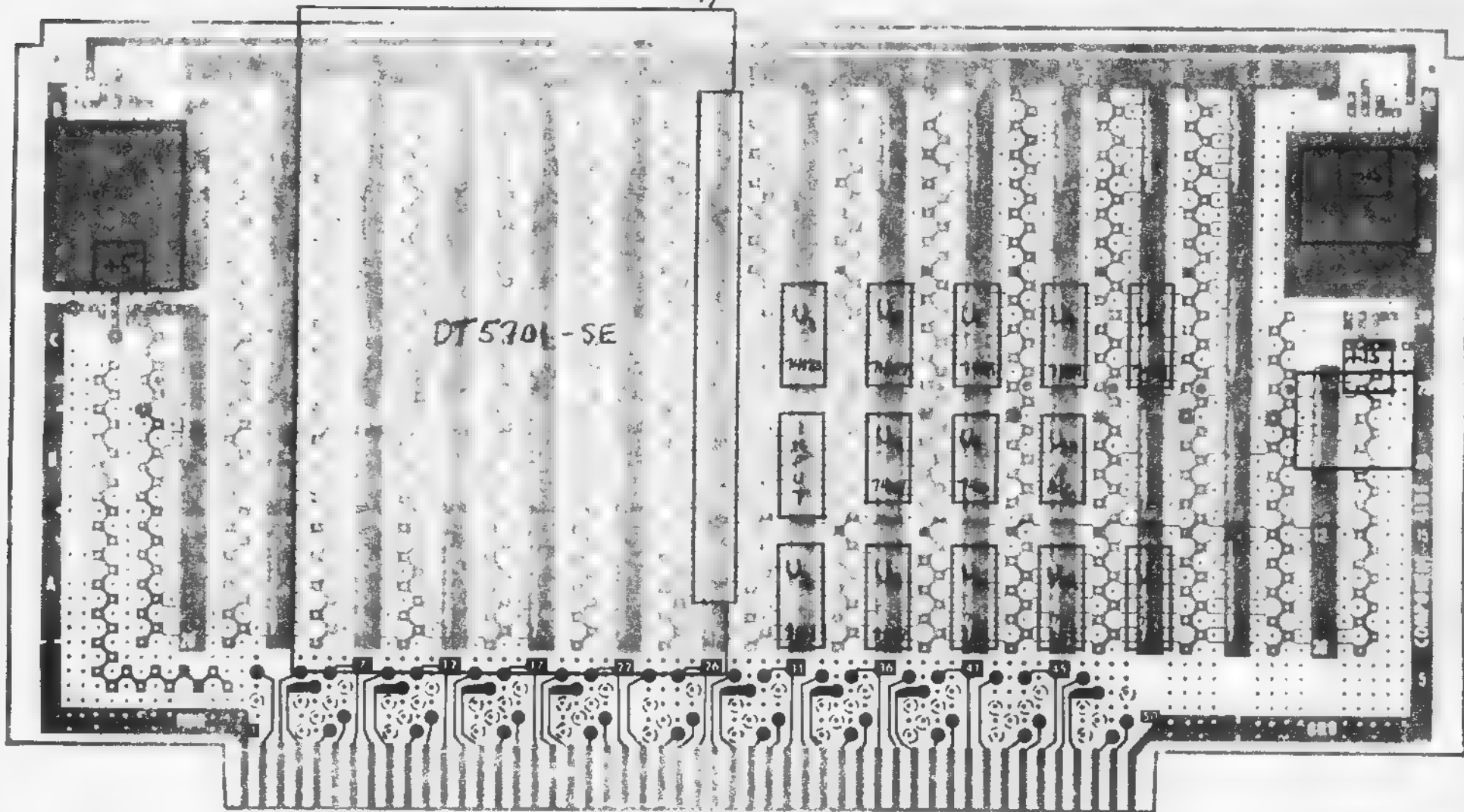
1. RECOMMENDED LOCATION FOR T46-4 TERMINALS IN POWER AND GROUND PLANES AT ROWS 23 & 25, AND RIGHT SIDE REGULATOR POSITION
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VECTOR D.I.P. PLUGBOARD
PATTERN .042" x 0.1" SPACED HOLES
LA13P2 LAYOUT PAPER

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SYLMAR, CALIFORNIA 91342

A/D



NOTES

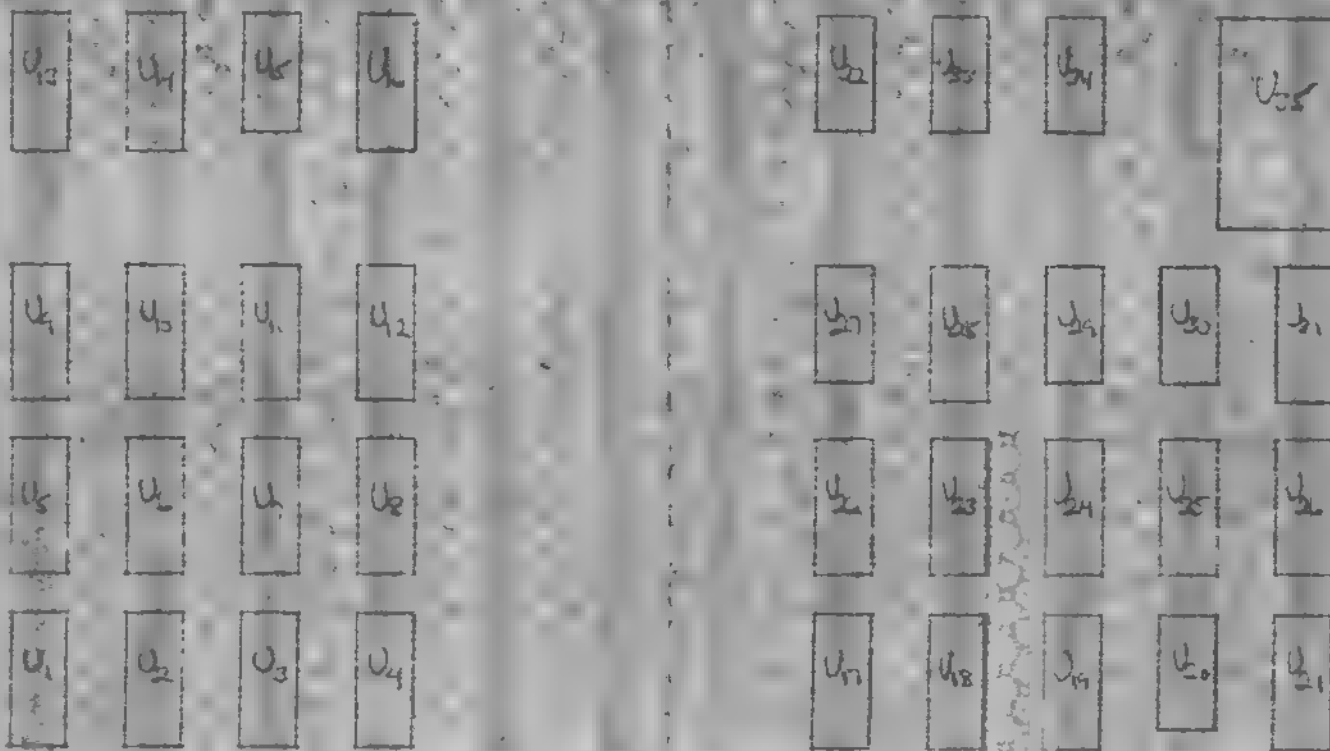
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VECTOR D.I.P. PLUGBOARD
PATTERN .042" x 0.1" SPACED HOLES
LA13P1 LAYOUT PAPER

VECTOR ELECTRONIC CO., INC.
12460 GLADSTONE AVE.
SYLMAR, CALIFORNIA 91342

D/A



TOP
TEMP
301

P.P.L.U. HOB
27x0.50
OUT-TEMP

20

21

AT

IN

TR

8

AT

IN

TR

8

UNIT 100

100

100

100

UNIT 100

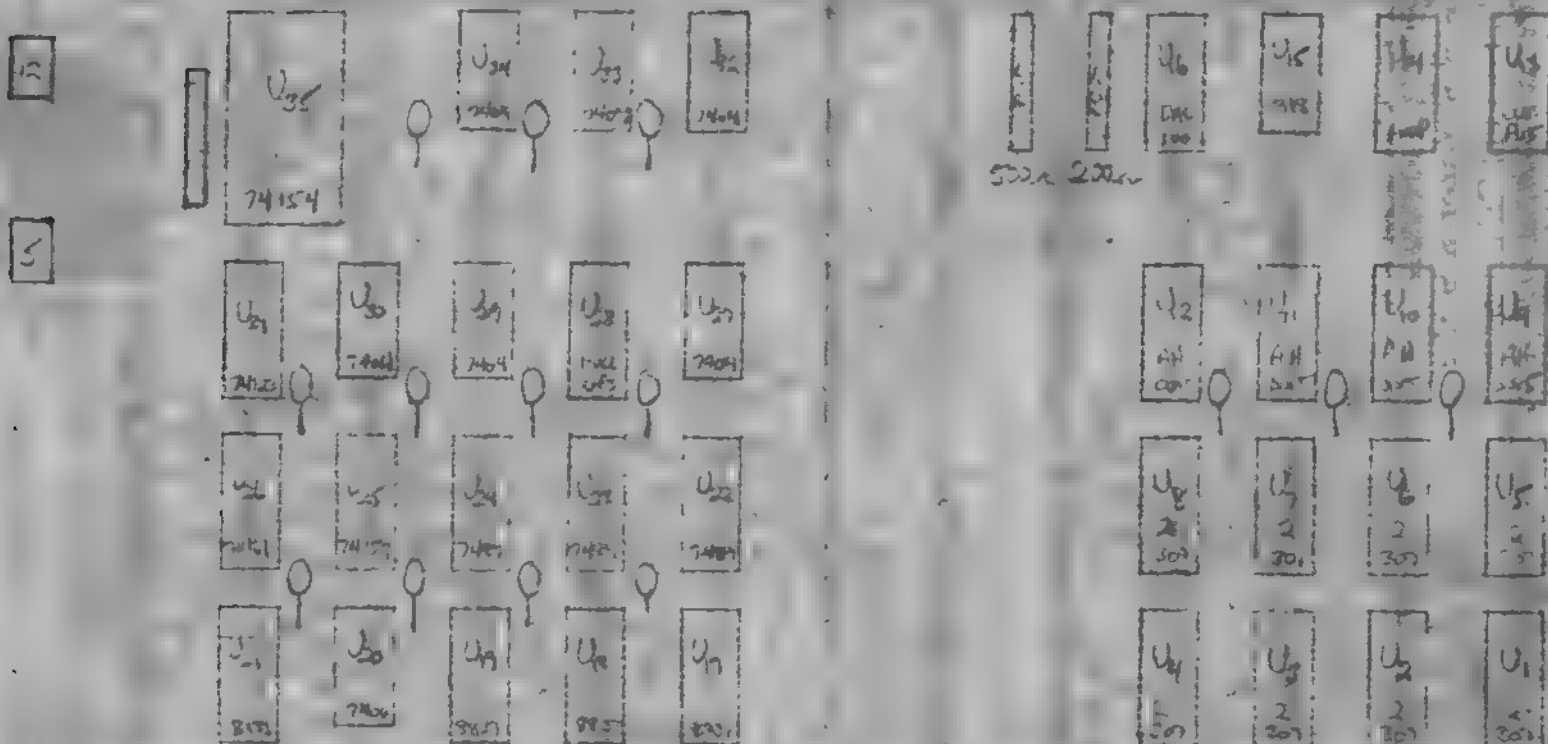
UNIT 100

UNIT 100

UNIT 100

3 FLEET HON
C. HUSTON
AL FURN 191347

D/A



ET.C. LTD.
BINGHAMTON, N.Y.
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PAGE 4 OF 4



173700 TO
173736

SCALE	APPROVED BY:	DRAWN BY	R.B.
DATE: 10/78		REVISED	
EXPERIMENTAL TV CENTER, LTD.			
BINGHAMTON, N.Y.		DRAWING NUMBER 2 OF 2	

BUFFER MEMORY MAP

ELEMENTS

LOCATION	DEDICATION
170000 }	UNDEDICATED
170036 }	
170040	
170042	
170044	
170046	
170050	
170052	
170054	
170056	
170060	
170062	
170064	
170066	
170070	
170072	
170074	
170076	
170100 }	UNDEDICATED
171556 }	
171560	REAL TIME OUTPUT
171562 }	UNDEDICATED
173674 }	

FEATURES

LOCATION	DEDICATION
173676	FEATURE AREA START
173700	A/D 1
173702	A/D 2
173704	A/D 3
173706	A/D 4
173710	A/D 5
173712	A/D 6
173714	A/D 7
173716	A/D 8
173720	A/D 9
173722	A/D 10
173724	A/D 11
173726	A/D 12
173730	A/D 13
173732	A/D 14
173734	A/D 15
173736	A/D 16
173740	UNDEDICATED
173742	REAL TIME INPUT
173744 }	UNDEDICATED
173766 }	
173770	FEATURE AREA STOP
173772	UNDEDICATED
173774	UNDEDICATED
173776	DON STAT REGISTER

EXPERIMENTAL TV CENTER, LTD. BINGHAMTON, N.Y.

SCALE:

APPROVED BY.

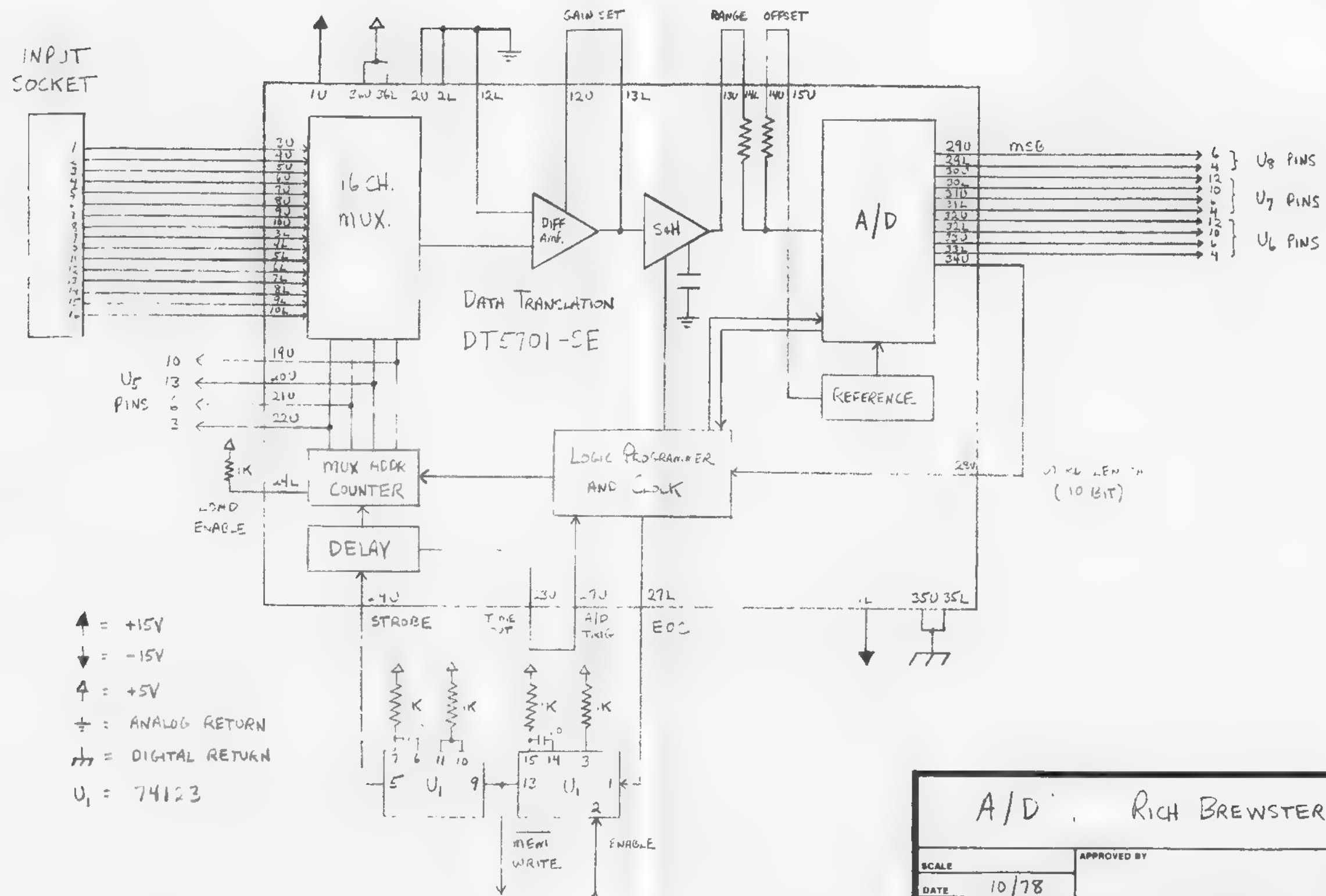
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DATE 1/79

REVISED

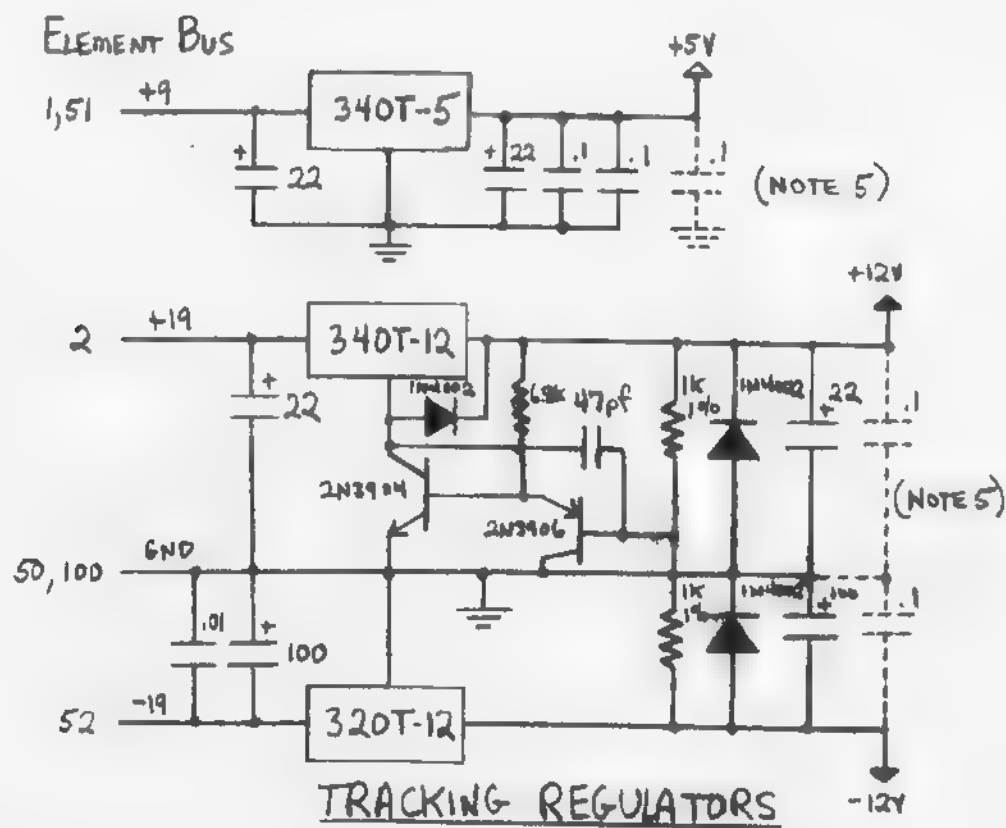
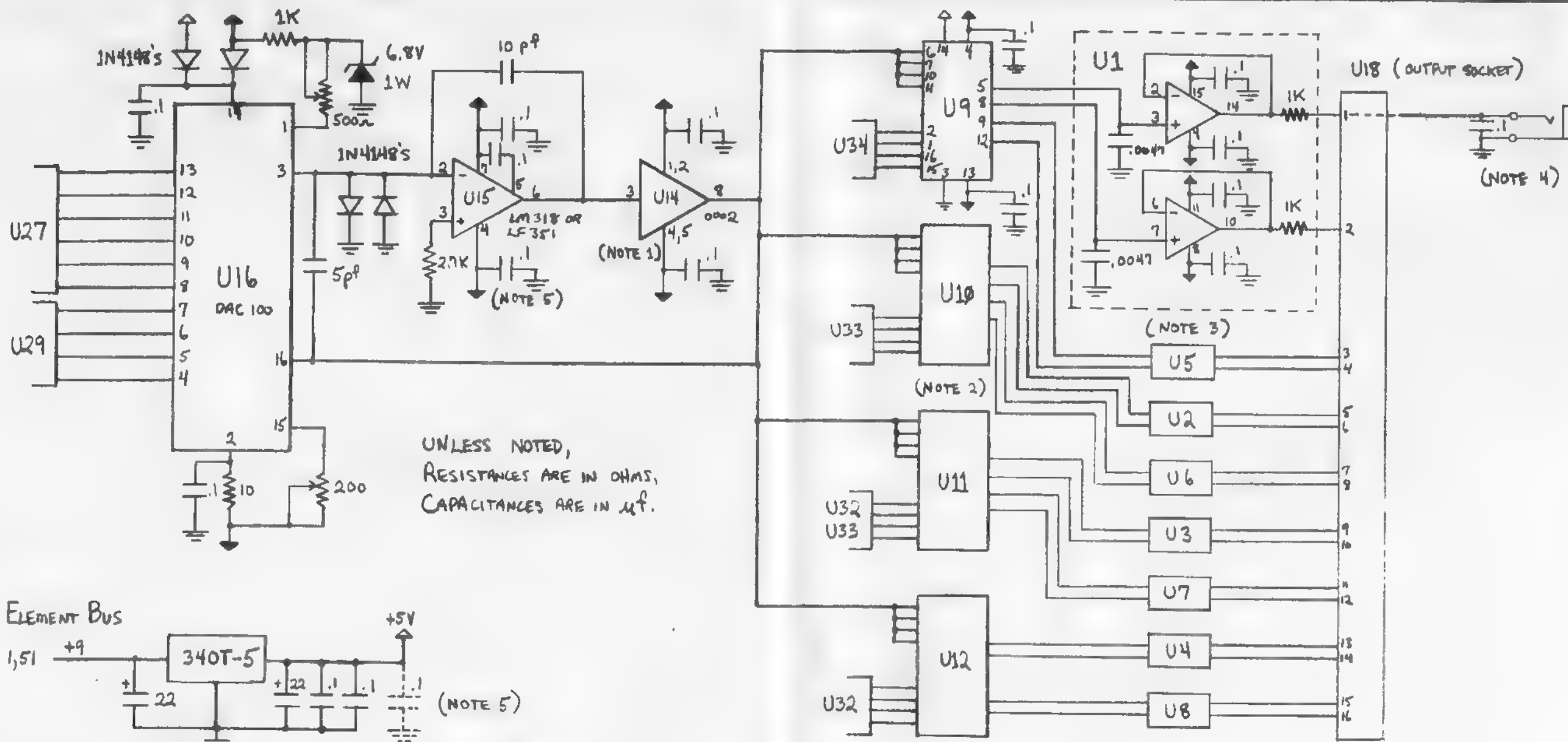
BUFFER MEMORY MAP

DRAWING NUMBER



A/D, RICH BREWSTER

SCALE	APPROVED BY	DRAWN BY RLB
DATE 10/78		REVISED
EXPERIMENTAL TV CENTER, LTD.		
BINGHAMTON, N.Y.		DRAWING NUMBER 1 OF 2

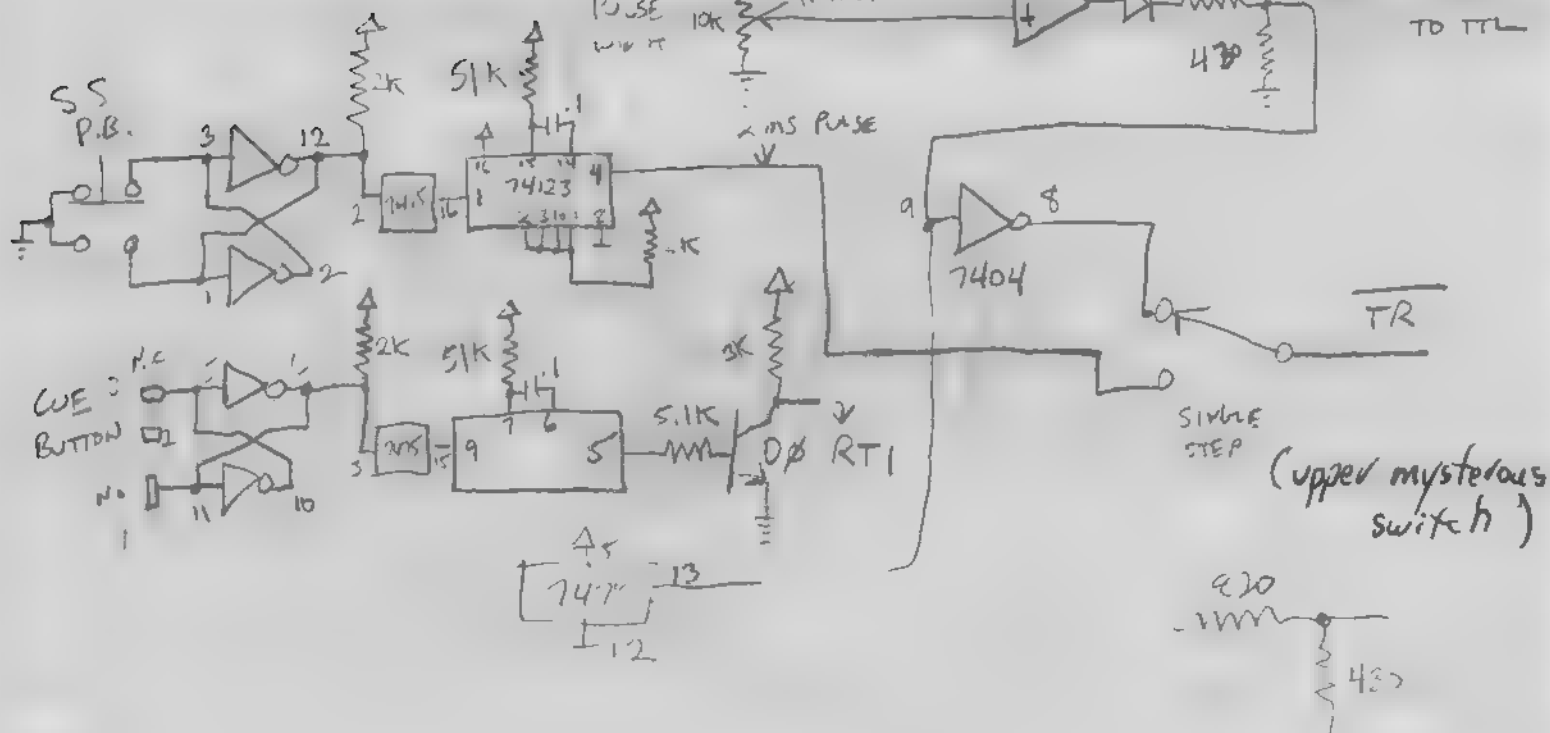
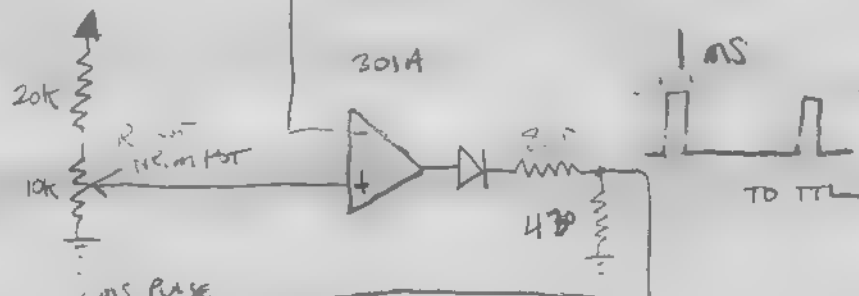
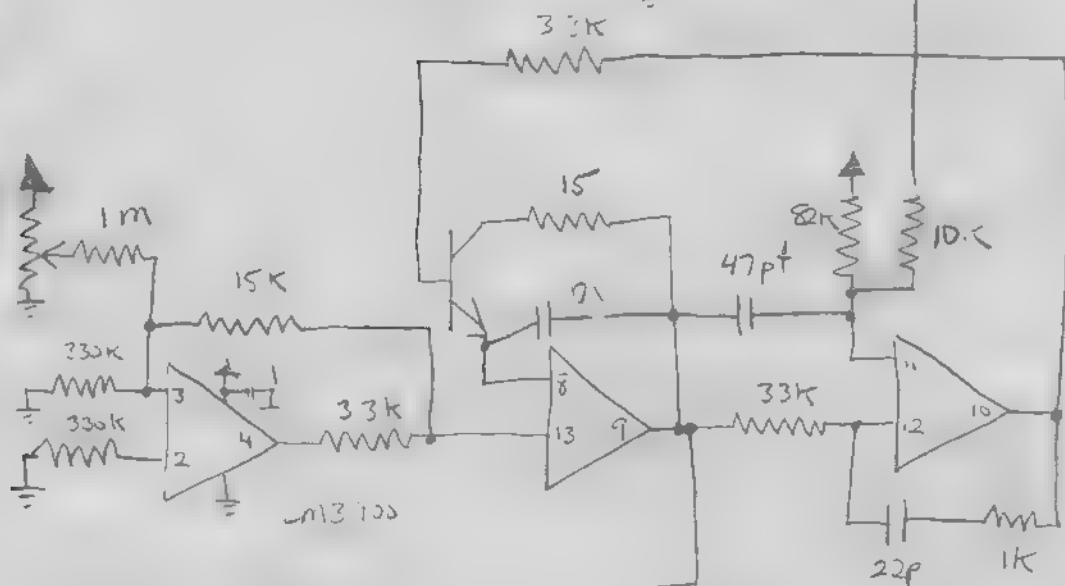


NOTES :

- 1) U14 (LH0002CN) IS A 10-PIN DIP.
- 2) U10-U12 ARE CONFIGURED SIMILARLY TO U9, AH0015.
- 3) U2-U8 ARE CONFIGURED SIMILARLY TO U1, WHICH CONSISTS OF 2 LM307N CHIPS IN ONE 16-PIN SOCKET.
- 4) SEE DESCRIPTION OF D/A OUTPUT PANEL.
- 5) .1 μf TANTALUM CAPACITORS ARE PLACED CLOSE TO POWER SUPPLY PINS OF ALL ANALOG CHIPS.

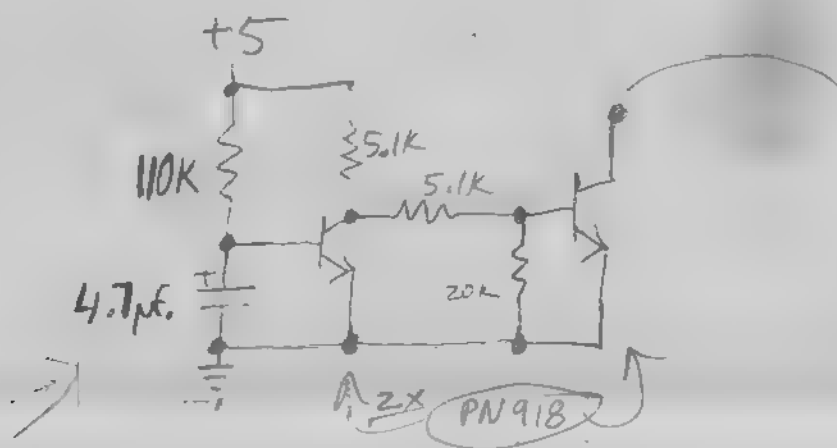
EXPERIMENTAL TV CENTER, LTD
BINGHAMTON, N.Y.
COMPUTER PROJECT
D/A BOARD (PAGE 2 OF 4)
ANALOG SECTION
DON McARTHUR 8/77 R.B.

UPDATED 1/79



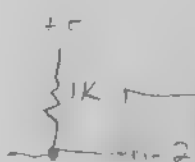
ADDED TO Computer

Power on reset



ALSO

Same as above



RESET BUTTON



0.4 A
current



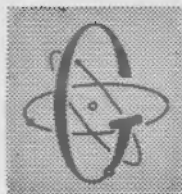
1.2K 100K

CHANGES

- ✓ 1. CELEFED RAW VO FROM BUS PIN 17 (NOW SPARE)
2. \overline{TR} IS NOW GENERATED BY AN OSCILLATOR* WHICH SIMULATES VO AND WILL LOCK TO VO INPUT FROM SYNC GEN. THIS FREES UP OUR SYNC GENERATOR.
- ✓ 3. FEATURE AREA WIDENED TO START AT 173676 TO ACCOMMODATE 16 CHANNEL A/D
4. PIN 14 U_2 OF DON'S INTERFACE BROUGHT OUT AND USED AS AN INTERRUPT REQUEST ENABLE (MANUAL)
5. LED ADDED AT PIN 5 U_{48} BUFFER MEMORY TO INDICATE DON STAT ENABLED
6. 8097 BUFFER ADDED AT \overline{R} (LL), \overline{S} (KK), \overline{T} (NN), AND \overline{SXB} (RR) INPUTS ON BUFFER MEMORY BOARD, 10K PULL-UPS REMOVED.
7. 1K CURRENT LIMITERS ON D/A OUTPUTS MOVED TO DA CARD, CAP. CHANGED TO .01 μ f.
8. ? added to (J. .)
9. Prio reg ... added to all bus ... with ... (...) for ...
10. D/A ADDRESSING CORRECTED

* THIS OSCILLATOR MAY BE SELECTED, OR A ONE-SHOT USED TO SINGLE-SCAN THE BUFFER MEMORY BY A PUSHBUTTON FOR TEST AND DEBUG.

Genesee Radio & Parts Co., Inc.



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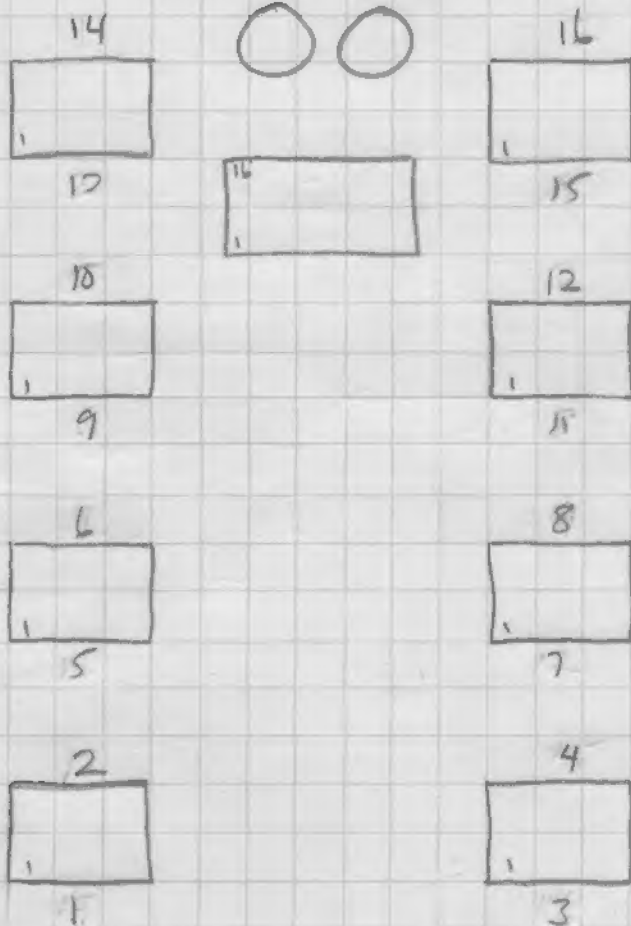
Electronic Components & Equipment

2550 DELAWARE AVENUE BUFFALO, N.Y., 14216

AREA 716
CODE

873-9661

ENTERPRISE 2745

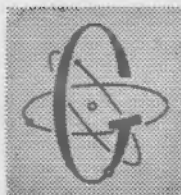


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Electronic Components & Equipment

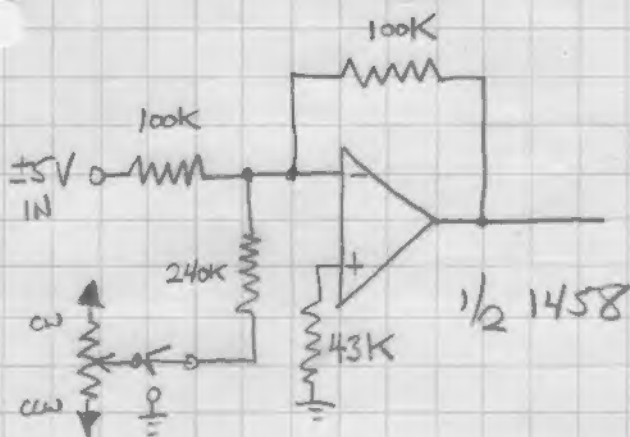
2550 DELAWARE AVENUE BUFFALO, N.Y., 14216

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CODE

873-9661

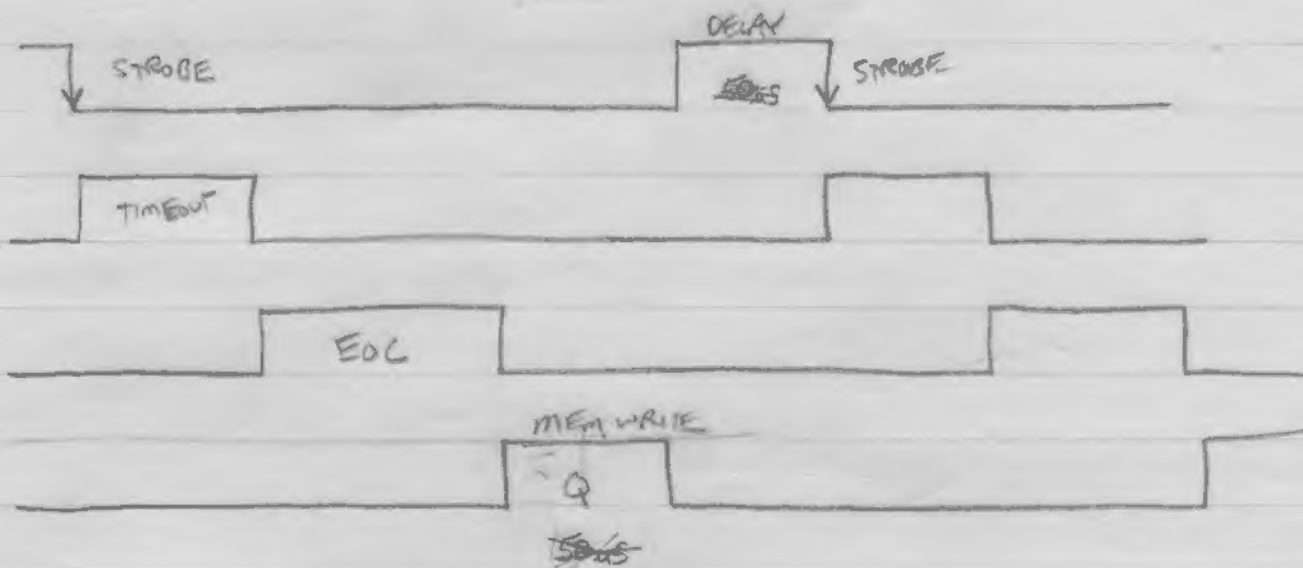
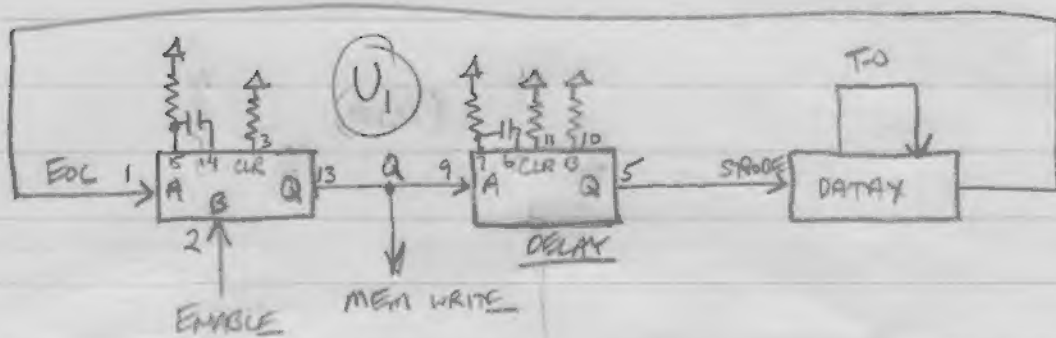
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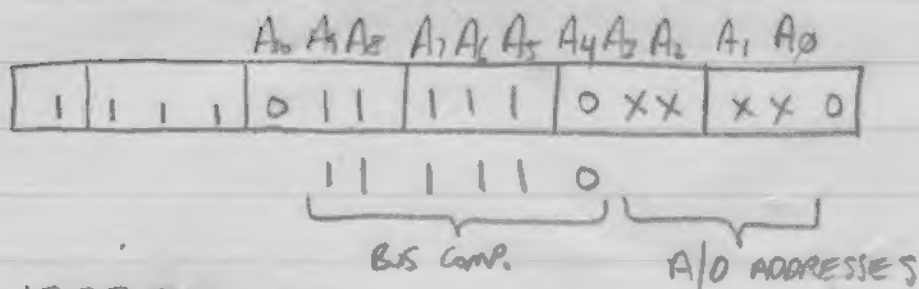


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